E-MANUAL

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Model_____ Serial No._____

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Glossary

Antenna Connection

If you are not connecting your TV to a cable or satellite box, you must connect an antenna or a cable outlet to the TV to receive broadcast signals.

Connect a cable from an antenna or cable outlet to the ANT IN connector as shown in the diagram below.

An antenna connection is not necessary when a cable box or satellite receiver is used.

Video Device Connection

Your TV has a variety of connectors for video input from external devices such as cable boxes, satellite receivers, Blu-ray players, DVD players, camcorders, and gaming consoles. Below is a list of featured connectors shown in descending order of picture quality.

- HDMI
- Component
- External Input

Connect a video device to the TV via an HDMI connector for the best picture quality. If the device does not have an HDMI connector, try a component connector to get the next best picture quality.

The number of connectors and their names and locations may vary depending on the model.

Refer to the external device's operating manual when connecting it to the TV. The number of external device connectors and their names and locations may vary depending on the manufacturer.

HDMI Connection

Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker containing the model number is attached to the back of the TV.

The connection method varies depending on the model.

The following types of HDMI cables are recommended:

- High-Speed HDMI Cable
- High-Speed HDMI Cable with Ethernet

Use an HDMI cable with a thickness of 14 mm or less.

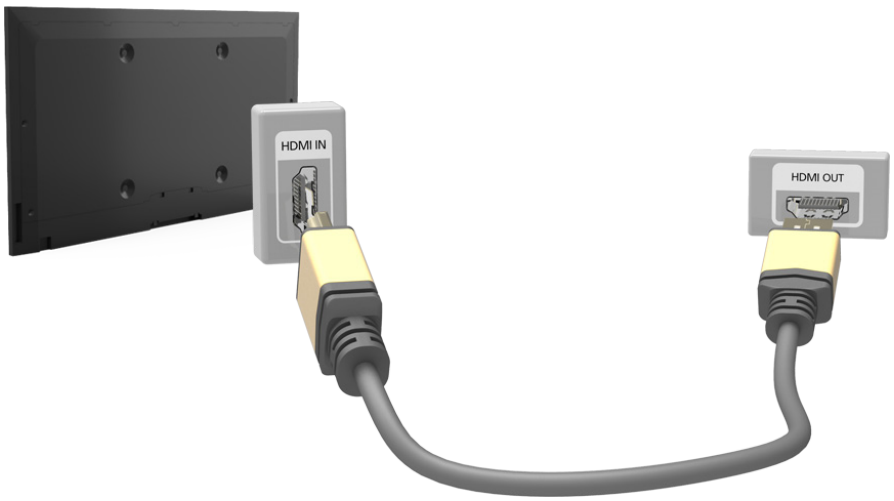
Using a non-certified HDMI cable may result in a blank screen or a connection error.

Some HDMI cables and devices may not be compatible with the TV due to different HDMI specifications.

This TV does not support HDMI Ethernet Channel. Ethernet is a LAN (Local Area Network) built with coaxial cables standardized by the IEEE.

Refer to the diagram and connect the HDMI cable to the video device's HDMI output connector and the TV's HDMI input connector.

The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

Component Connection

Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker containing the model number is attached to the back of the TV.

The connection method varies depending on the model.

Refer to the diagram and connect the component cable to the TV's component input connectors and the device's component output connectors.

Make sure the cable colors match the connector colors.

Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

External Input Connection

Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker containing the model number is attached to the back of the TV.

The connection method varies depending on the model.

Refer to the diagram and connect the AV cable to the TV's AV input connectors and the device's AV output connectors.

If you are using the TV's AV input connectors, connect the device's audio output to the TV using a Y connector.

Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

TV Audio through the External Speakers

Your TV has a variety of connectors for audio input from devices such as Blu-ray players and DVD players and for audio output to such devices as amplifiers. The connectors are listed below.

- Digital Audio (Optical)
- Audio

For better audio quality, it is a good idea to use an AV receiver.

The number of connectors and their names and locations may vary depending on the model.

Refer to the external device's operating manual when connecting it to the TV. The number of external device connectors and their names and locations may vary depending on the manufacturer.

Digital Audio (Optical) Connection

Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker containing the model number is attached to the back of the TV.

The connection method varies depending on the model.

Connecting an AV receiver to the TV via a digital audio (optical) connector lets you listen to digital audio.

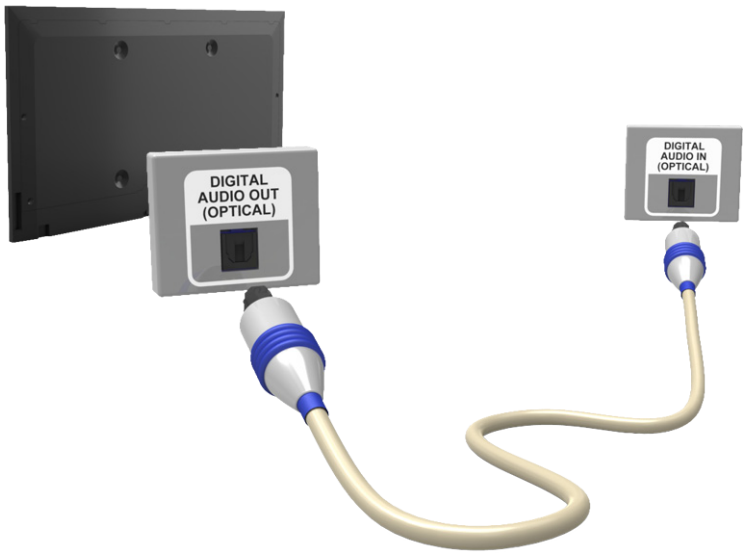
Connecting a device using an optical cable does not automatically turn off the TV speakers. To turn off the TV's speakers, set **TV Sound Output** (**Sound** > **Speaker Settings** > **TV Sound Output**) to something other than TV Speaker.

Adjust the audio device's volume using its remote control.

An unusual noise coming from the audio device while you are using it may indicate a problem with the audio device itself. If this occurs, ask for assistance from the audio device manufacturer.

Digital audio is only available with 5.1-channel broadcasts.

Refer to the diagram and connect the optical cable to the TV's digital audio output connector and the device's digital audio input connector.



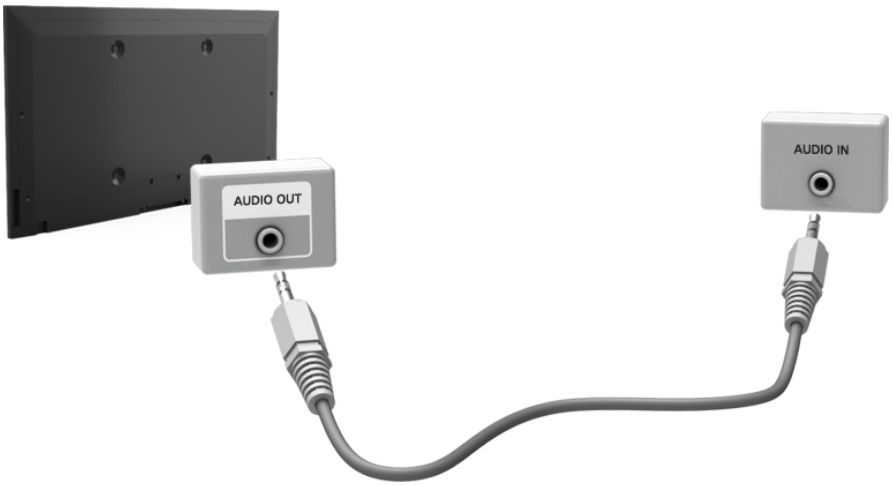
Audio Output Connection

This function is not available on all models.

Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker containing the model number is attached to the back of the TV.

The connection method varies depending on the model.

Refer to the diagram and connect the audio cable to the TV's audio output connector and the device's audio input connector.



Connecting to a Computer

You can directly connect a computer to the TV or to the network to view the computer screen or content on the TV. Connect the computer to the TV as follows.

- **Connecting through the HDMI Port**

  You can connect the computer to the TV using the HDMI cable to display the computer screen on the TV.

- **Connecting with the DVI to HDMI cable**

  You can connect a computer to the TV by connecting the computer's DVI port to the TV's HDMI port with the DVI to HDMI cable to display the computer screen on the TV.

- **Connecting Through Home Network**

  Quickly access the photo, video and music files saved on a computer by connecting the TV and the computer to the same router or AP.

Connecting Through the HDMI Port

First, check the TV model before connecting an external device to the TV. On the back of the TV, the model number sticker is attached.

The connection method differs depending on the model.

For HDMI connection, one of the following HDMI cable types is recommended:

- High-Speed HDMI Cable
- High-Speed HDMI Cable with Ethernet

Use an HDMI cable with a thickness of 14 mm or less. Using a non-certified HDMI cable may result in a blank screen or a connection error.

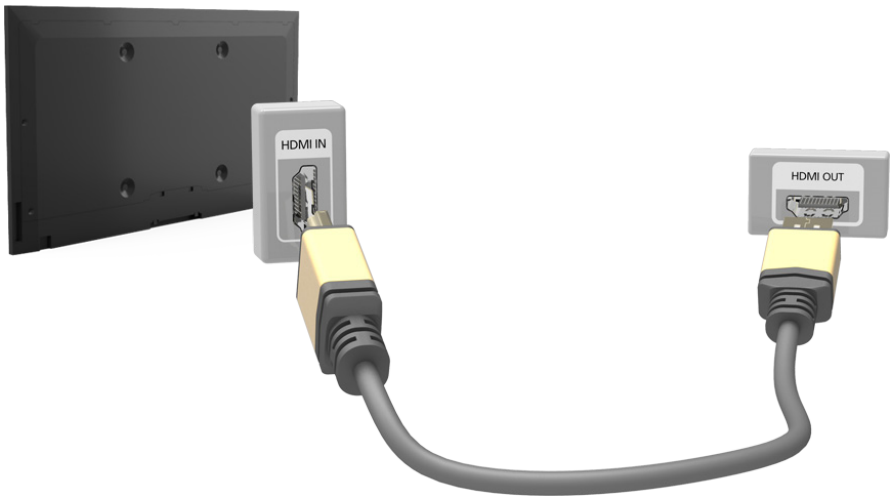
Some HDMI cables and devices may not be compatible with the TV due to different HDMI specifications.

This TV does not support HDMI Ethernet Channel. Ethernet is a LAN (Local Area Network) built on coaxial cables standardized by the IEEE.

Some computers do not support HDMI interface depending on the graphics adapter specifications. In this case, use a DVI to HDMI cable to connect the computer to the TV. For more information, refer to "Connecting With the DVI to HDMI Cable".

Refer to the diagram and connect the HDMI cable to the external video device's HDMI output connector and the TV's HDMI input connector.

The number of ports, and their names and locations may vary depending on the model.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

Connecting With the DVI to HDMI Cable

If the graphics adapter of your computer does not support HDMI interface, connect the computer to the TV with the DVI (Digital Visual Interactive) to HDMI cable. However, the DVI to HDMI connection is only supported by the HDMI port for DVI and it does not support audio signal transmission. To listen to the computer sound, connect the external speaker to the computer's audio output connector.

Refer to the diagram and connect an HDMI-to-DVI cable to the TV's HDMI (DVI) port and the computer's DVI output port.

Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

Connecting Through Home Network

Quick access and play the photo, video and music files in a computer on the TV screen.

1. Connect the TV and the computer to the same router or AP. Once you connect them to one router or AP, a home network is configured.

   Home Network refers to the technology to share content between TV, computer and mobile device by connecting them to one wired or wireless router.

2. On the computer, select [Control Panel] > [Network and Internet] > [Network and Sharing Center] > [Change advanced sharing settings] and select [Choose media streaming options...] to activate media streaming.
3. From the list, set the TV to [Allowed].
4. Launch Windows Media Player on a computer, select [Settings] > [Library Management], add the location where photo, video and music files are saved to play them on the TV screen.

   Alternatively, once you move the files to the folder that is specified by Windows Media Player by default, you can play them on the TV screen.

   As long as File Sharing is activated, unauthorized access may be allowed. When you do not need to access data, disable the File Sharing.

Connecting to a Mobile Device

You can directly connect a mobile device such as a smartphone or tablet to the TV, or connect it to the network and play the mobile device screen or content on the TV screen. Connect the mobile device to the TV as follows.

- **Connecting with an MHL to HDMI cable**

  Connect the USB port of the mobile device and the HDMI port of the TV with an MHL to HDMI cable to view the mobile device's screen on the TV screen.

- **Mobile Device Screen on TV (Screen Mirroring)**

  Wirelessly connect the TV and the mobile device with the Screen Mirroring function, you can view the mobile device screen on the TV screen.

  This option is available only on a mobile device that supports the mirroring function.

  Depending on the software in your mobile.

- **Connecting Mobile Devices without a Wireless Router (Wi-Fi Direct)**

  Wi-Fi Direct enables you to connect the TV and the mobile device without a router or AP. Quick access and play the photo, video and music files in the connected mobile device on the TV screen.

  This option is available only on a mobile device that supports the Wi-Fi Direct function.

- **Connecting Through Home Network**

  You can conveniently play the photo, video and music files saved on a mobile device by connecting the mobile device and the TV to the same router or AP.

Connecting With an MHL to HDMI Cable

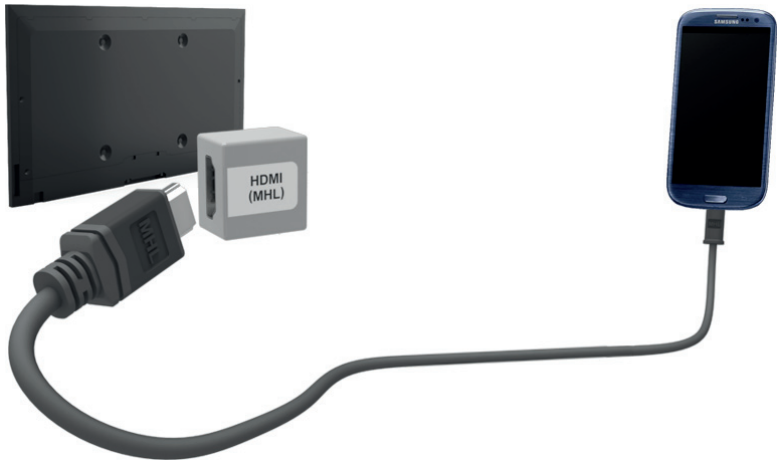
This function is only available on certain models in specific geographical areas.

MHL (Mobile High-definition Link) lets you display a mobile device's screen on the TV. However, MHL is only available through the TV's HDMI (MHL) port and only when used in conjunction with an MHL-enabled mobile device. For information on configuring MHL on your mobile device, refer to the device's User Manual.

Connecting the MHL-to-HDMI cable automatically switches **Picture Size** to **Screen Fit**. This setting will not change automatically if you are using an HDMI adapter. In this case, change the settings manually in the menu.

If you are using an HDMI adapter, the TV recognizes the signal as an HDMI signal and may respond differently than it would to an MHL to HDMI cable connection.

Refer to the diagram and connect the MHL-to-HDMI cable to the TV's HDMI (MHL) port and the mobile device's USB port.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

Mobile Device Screen on TV (Screen Mirroring)

- This function is only available on certain models in specific geographical areas.
- Depending on the software in your mobile.

MENU > Network > Screen Mirroring Try Now

Wirelessly connect a mirroring function-enabled mobile device to the TV to play the video and listen to the audio of the mobile device on the TV. Screen Mirroring refers to the function that outputs the video and audio of the mobile device on the TV as well as the mobile device.

- To use the Screen Mirroring function, the mobile device must support the Screen Mirroring function such as AllShare Cast. To check whether your mobile device supports the Screen Mirroring function, please visit the mobile device manufacturer's website.
- The video or audio may intermittently stop depending on the network condition.

Connecting via a mobile device…

1. On the mobile device, run **Screen Mirroring**. The mobile device searches for available devices to connect to.
2. From the search result list, select TV. The TV displays a pop-up window.
3. In the pop-up window, select **Allow** to connect the mobile device.

   - All previously allowed mobile devices will automatically connect without needing approval.
   - If you select **Deny**, the device won't appear and can't be activated in this way. Navigate to **Network** > **Screen Mirroring** > **Device Manager** to allow the previously denied mobile device.

Not searching for the TV on mobile devices...

1. Navigate to **Network** > **Screen Mirroring** to run **Screen Mirroring**. Also, you can select **Screen Mirroring** on a list by pressing SOURCE button.
2. Run mirroring on the mobile device. Display a list while automatically searching for mobile devices.
3. Select the TV and it connects automatically.

   When the mobile devices cannot connect, try turning the TV off and on.

Allow/Reject the connection via mobile devices

This is only available for watching when mobile devices allow the connection.

1. Navigate to **Network** > **Screen Mirroring** > **Device Manager** to select **Device Manager**. This displays a list of required mobile devices connection.
2. You can allow access or deny connections with mobile devices.

Connecting Mobile Devices without a Wireless Router (Wi-Fi Direct)

MENU > Network > Wi-Fi Direct Try Now

You can directly connect a mobile device with Wi-Fi Direct feature to the TV without using a wireless router or AP. By connecting a mobile device with the TV through **Wi-Fi Direct**, you can play photo, video and music files saved in the mobile device on the TV.

This option is available only on a mobile device that supports the Wi-Fi Direct function. Please check if your mobile device supports Wi-Fi Direct.

1. Enable Wi-Fi Direct on the mobile device and then navigate to **Network** and select **Wi-Fi Direct** on the TV. The TV automatically scans for and displays a list of available devices. The TV's name also appears on the mobile device.
2. Select the device from the list to initiate a connection. If a connection request is made by the TV, a permission message appears on the mobile device and vice versa.
3. Allow the connection. Then, the TV and the mobile device are connected.

Connecting Through Home Network

You can conveniently play the photo, video and music files in a mobile device on the TV.

1. Connect both the TV and the mobile device to the same router or AP. Once you connect them to a single router or AP, a home network is configured.

   Home Network refers to the technology to share content between TV, computer and mobile device by connecting them to one wired or wireless router.

2. Enable File Sharing on the mobile device. You can play the content shared by the mobile device on the TV.

   As long as File Sharing is activated, unauthorized access may be allowed. When you do not need to access data, disable the File Sharing.

The name of the TV on the Network

MENU > Network > Device Name Try Now

Choose or specify the name of the TV that will appear on mobile devices and laptop computers.

1. Select Device Name from the Network menu, and then choose a name from the list that appears. Alternatively, select User Input to enter a name manually.
2. Check the name from a mobile device or laptop computer.

Switching Between Video Sources

Press the SOURCE button to switch between external devices connected to the TV. For example, to switch to a game console connected to the second HDMI connector, press the SOURCE button. From the Source list on the Source screen, select HDMI2.

The connector names may vary depending on the product.

The following options are also available on the Source screen:

- Option menu (Tools)

  Using your remote, highlight the source you want to assign a device name to.

  Open the option menu using your remote.

  The available options for each of the connectors may vary.

  – Edit Name: You can rename devices connected to the TV to more easily identify external sources. For example, you can designate a computer connected to the TV via an HDMI-DVI cable as DVI PC. Alternatively, simply designate a computer connected to the TV via an HDMI cable as PC. You can also designate an AV device connected to the TV via an HDMI-DVI cable as DVI Devices.

  – Anynet+ (HDMI-CEC): Displays a list of Anynet+ (HDMI-CEC)-compliant devices that are connected to the TV.

    This option is only available when Anynet+ (HDMI-CEC) is set to On.

  – Information: View detailed information about the connected devices.

  – Remove USB: Use to safely remove a USB device connected to the TV.

    This option is only available when a USB device has been selected.

Controlling the TV with a Keyboard

MENU > System > Device Manager > Keyboard Settings Try Now

You can use a keyboard to control the TV with greater ease and comfort.

Certain models do not support USB HID class keyboards.

Connecting a Keyboard

Connecting a USB Keyboard

Plug the keyboard cable into the TV's USB port. A connection message will appear on the screen.

Using the Keyboard

Use the following remote features with the USB keyboard connected to the TV.

- Arrow Keys (moving the focus), Windows Key (MENU Button), Menu List Key (TOOLS Button), Enter Key (Select/run item), ESC (RETURN Button), Number Keys (Number Buttons)
- F1 (A), F2 (B), F3 (C), F4 (D), F5 (), F6 (SOURCE Button), F7 (CH LIST Button), F8 (MUTE Button), F9/F10 (Volume Buttons), F11 / F12 (Channel Buttons)
- Page Up/Page Down: Scroll web browser pages up/down.
- Holding down the Enter key: On the Smart Hub screen, navigate to an item and hold down the Enter key to display the Options menu.

Changing Keyboards

Select System > Device Manager > Keyboard Settings > Select Keyboard. Designate which keyboard to use. Try Now

Only one keyboard can be used at a time.

Input Languages, Keyboard Type, and Switch Language Key

Select **System** > **Device Manager** > **Keyboard Settings** > **Keyboard Options**. The following options are available: Try Now

- **Keyboard Language**

  If the keyboard supports multiple languages, choose which language you want to use from the list.

- **Keyboard Type**

  Specify the type of language selected under **Keyboard Language**.

  The **Keyboard Type** list varies depending on which language was selected under **Keyboard Language**.

- **Switch Input Language**

  If the keyboard supports multiple languages, choose from the list which key to use to switch between languages.

Controlling the TV with a Mouse

MENU > **System** > **Device Manager** > **Mouse Settings** Try Now

You can use a keyboard to control the TV with greater ease and comfort.

Certain models do not support USB HID class keyboards.

Connecting a Mouse

Connecting a USB Mouse

Plug the mouse cable into the TV's USB port. A connection message will appear on the screen.

Using the Mouse

Once a USB mouse is connected to the TV, a pointer will appear on the TV's screen. You can use this pointer to control the TV as you would a computer.

- **Selecting and Running an Item**

  Left-click on the mouse.

- **Displaying the Volume, Mute, and Channel Buttons**

  Select the volume/channel icon on the screen while watching TV. Use the on-screen buttons to adjust the volume or switch the channel.

  Select the volume/channel icon again to hide the buttons.

- **Showing Tools Buttons**

  Right-clicking shows the Tools buttons on the screen so that you can easily use the TV functions.

  The Tools buttons may vary depending on the function.

- **Displaying the Context-sensitive Menu on Smart Hub**

  On the Smart Hub screen, navigate to an item, and hold down the left mouse button for 1 second. The context-sensitive menu available to the selected item appears.

  The context-sensitive menu may vary depending on the item you selected.

- **Scrolling the TV Menu or Screen**

  Move the mouse wheel up or down. This scrolls the TV menu or screen up/down.

- **Exiting the TV Menu or Feature**

  Click on the X button. This closes the menu.

  The X button appears on the TV menu when a mouse is being used. Left-clicking once while using a feature displays the X button on the current screen.

Changing Mouse

Select **System** > **Device Manager** > **Mouse Settings** > **Select Mouse**. Designate which mouse to use. Try Now

Only one mouse may be used at a time.

Changing Mouse Buttons and Pointer Speed

Select **System** > **Device Manager** > **Mouse Settings** > **Mouse Options**. The following options are available: Try Now

- **Primary Button**

  Choose which (left or right) button to use to select and run items.

- **Pointer Speed**

  Adjust the movement speed of the pointer that appears on the screen.

Entering Text Using QWERTY

A QWERTY keypad appears when you need to enter text (entering the network password, logging into your Samsung account, etc.), allowing you to enter text using your remote control.

Using Additional Functions

Select ⚙ on the QWERTY keyboard screen. The following options are available:

- **Recommended text**

  Enable/disable the Recommended Text feature. Enabling the **Recommended text** feature allows you to quickly enter text starting with the characters you typed in by showing the recommended words. To enter the word "Internet," for example, all you have to do is enter "In" and select the word "Internet" from the list of recommended words. And the selected word will be memorized by the keyboard so that you can enter the same text with ease using this function.

- **Reset recommended text data**

  Delete both the recommended words and the memorized words to clear the list.

- **Predict Next Letter**

  Enable/disable the Predict Next Letter feature. Enabling the Predict Next Letter feature eliminates the need to find and select individual character keys. To enter the word "Internet," for example, select "I". A predicted word will then appear next to the I key. Simply select the predicted word to enter "Internet".

  ✎ This feature is limited to words that have previously been added to the dictionary.

Establishing a Wired Internet Connection

Connecting the TV to the Internet gives you access to online services and SMART features, and lets you update the TV's software quickly and easily through the Internet.

Using Cat 7 LAN Cables

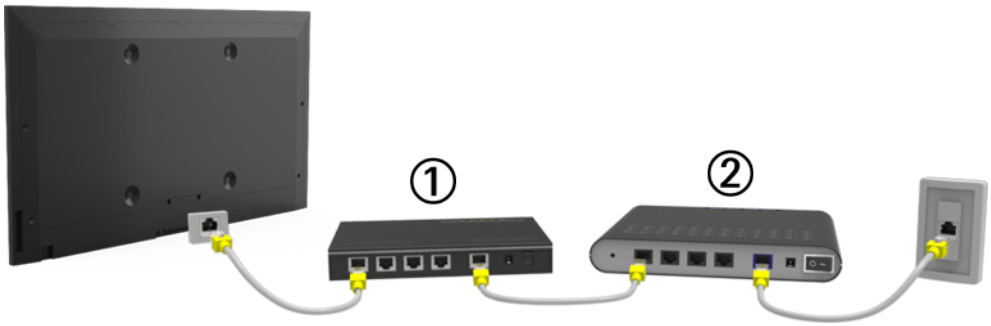
Use Cat 7 LAN cables to link your TV to the Internet Access Points.

The TV will not be able to connect to the Internet if the network speed is below 10Mbps.

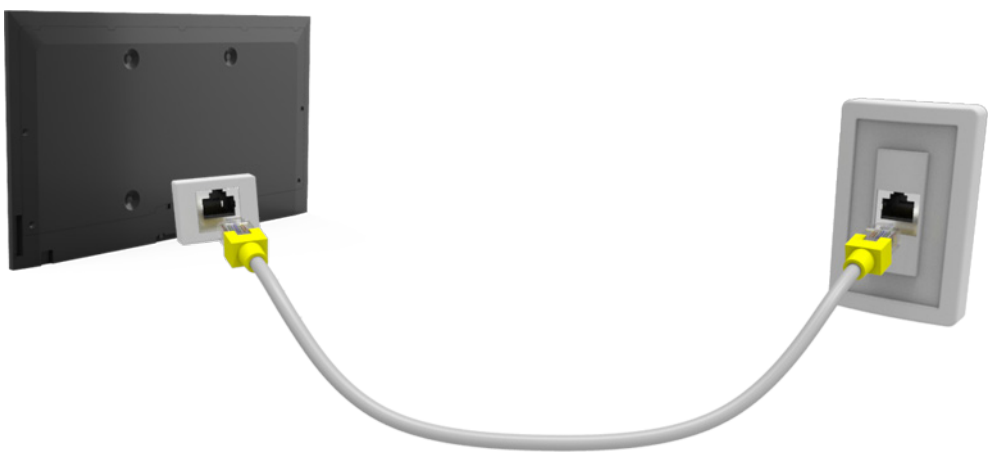
There are three ways to connect the TV to your Internet Access Points. Using Cat 7 cables, connect the TV to the Access Points as shown in one of the following illustrations.

- External Modem

- ① IP Router + ② External Modem



- Wall-mounted LAN Outlet



Connecting to a Wired Internet Network Automatically

MENU > Network > Network Settings Try Now

Automatically connect to an available network.

1. Set the Network type to Wired, and then select Connect.
2. The TV attempts to connect to an available network. Once it is successful, you will see a confirmation message. Select OK. If the attempt fails, try again, or connect manually.

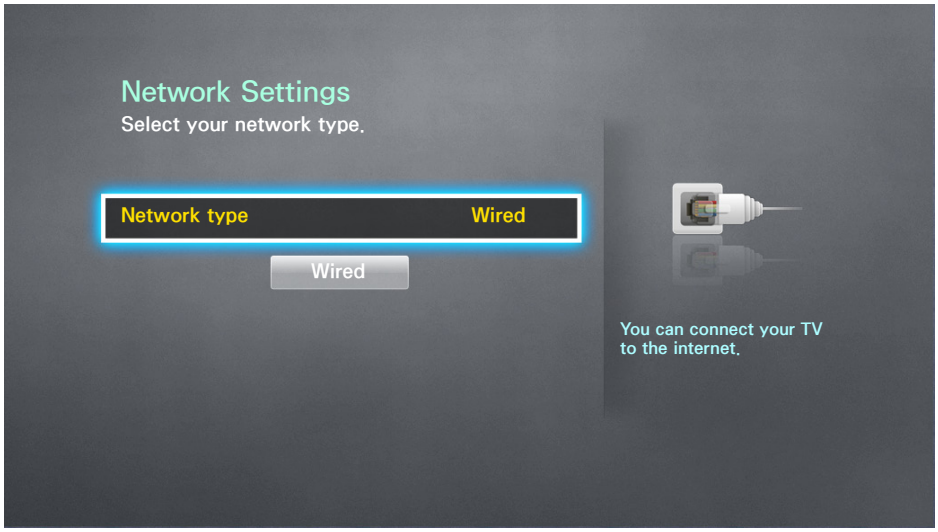
Connecting to a Wired Internet Network Manually

MENU > Network > Network Settings

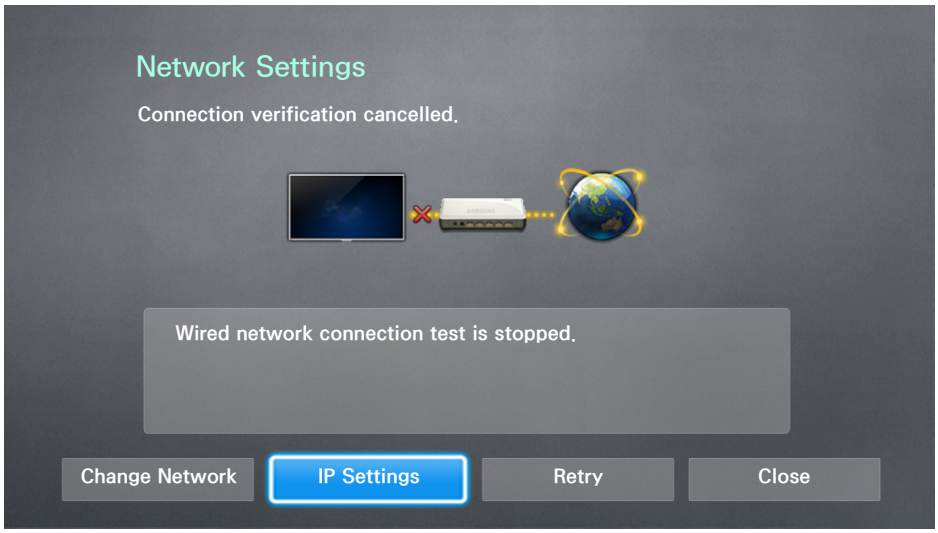
With networks that require a static IP address, you will need to enter the IP address, subnet mask, gateway, and DNS values manually to connect to the network. To get these values, contact your Internet Service Provider (ISP).

Refer to the "Dynamic versus Static IP Addresses" section for more information on dynamic IP and static IP addresses.

1. Set the Network type to Wired, and then select Connect.



2. Select **Stop** when the TV attempts to connect to the network. Once the network connection has been interrupted, select **IP Settings**.



3. In the **IP Settings** screen, set **IP Setting** to **Enter Manually**.

4. Press the ↵ button, enter a value for the **IP Address** using the number buttons, and then select **OK**.
5. Repeat the process for **Subnet Mask**, **Gateway**, and **DNS Server**.
6. When done, select **OK**.
7. The TV attempts to connect to the network again using the settings you entered. Once it has established the connection, it displays a confirmation message. Select **OK**.

   The network connection speed may differ depending on the DNS server settings.

   For details on the DNS server settings, contact your Internet service provider (ISP).

Establishing a Wireless Internet Connection

Connecting the TV to the Internet gives you access to online services and SMART features, and lets you update the TV's software quickly and easily through the Internet.

Connecting to a Wireless Internet Network Automatically

MENU > Network > Network Settings

Connect the TV to the Internet via a wireless router. Make sure you have the wireless router's SSID (name) and security key settings before attempting to connect. The security key can be found on the wireless router's configuration screen.

1. On the Network Settings screen, set Network type to Wireless. The TV automatically displays a list of available wireless networks.
2. Select a network (SSID). If the network you want doesn't appear in the list, select Add Network, and enter the network's SSID manually.
3. Using the on-screen keyboard that appears, enter the security key. When finished, select Done. If the selected network is not security-enabled, the TV will by-pass the on-screen keyboard and attempt to connect right away.
   - To select a character on the on-screen keyboard, highlight the character and then press the ↵ button. Select Caps to view capital letters. Select the 123#& key to view additional characters.
   - To view the security key as you enter it, select Show Password.
4. The TV attempts to connect to the network. Once a connection is established, the TV displays a confirmation message. Select OK. If the attempt fails, try again or connect manually.

Connecting to a Wireless Internet Network Manually

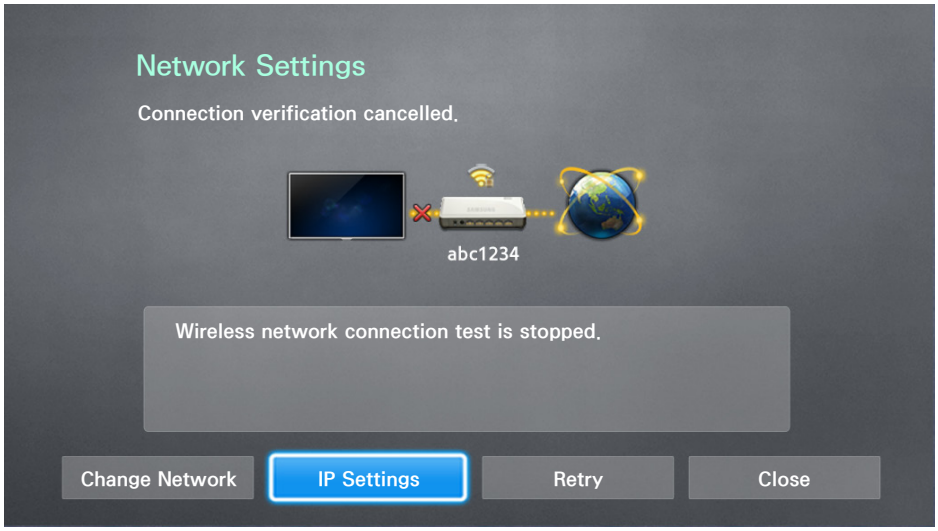
MENU > Network > Network Settings

With networks that require a static IP address, you will need to enter the IP address, subnet mask, gateway, and DNS values manually to connect to the network. To get the IP address, subnet mask, gateway and DNS values, contact your Internet Service Provider (ISP).

Refer to the "Dynamic versus Static IP Addresses" section for more information on dynamic IP and static IP addresses.

1. On the Network Settings screen, set Network type to Wireless. The TV automatically displays a list of available wireless networks.

2. Select a network (SSID). If the network you want doesn't appear in the list, select Add Network, and enter the network's SSID manually.
3. Using the on-screen keyboard that appears, enter the security key. When finished, select Done. If the selected network is not security-enabled, the TV will by-pass the on-screen keyboard and attempt to connect right away.
4. Select Stop when the TV attempts to connect to the network. Once the network connection has been interrupted, select IP Settings.



5. In the **IP Settings** screen, set **IP Setting** to **Enter Manually**.

6. Press the ↵ button enter a value for the **IP Address** using the number buttons, and then select **OK**.
7. Repeat the process for **Subnet Mask**, **Gateway**, and **DNS Server**.
8. When done, select **OK**.
9. The TV attempts to connect to the network again using the entered settings. Once it has established the connection, it displays a confirmation message. Select **OK**.

   Network connection speeds may differ depending on the DNS server settings.

   For details on the correct DNS server settings, contact your Internet service provider (ISP).

Connecting to a Wireless Internet Network with WPS

MENU > **Network** > **Network Settings**

If the router has a WPS push button, you can use it to connect the TV to the router automatically. WPS automatically configures the SSID and WPA key settings.

- Your router must support WPS to use the WPS functionality.

1. On the **Network Settings** screen, set **Network type** to **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select **WPS (PBC)**, and then press the router's WPS or PBC button within two minutes.
3. The TV automatically acquires the SSID and security key settings, and then connects to the network. Once a connection is established, the TV displays a connection message. Select **OK**.

Troubleshooting Internet Connectivity Issues

If you are not able to connect the TV to the Internet read the information below.

Troubleshooting Wired Internet Connectivity Issues

No network cable found

Make sure the network cable is plugged in. If it is connected, make sure the router is turned on. If it is on, try turning if off and on again.

IP auto setting failed

Do the following or configure the **IP Settings** manually.

1. Ensure that the DHCP server is enabled on the router and reset the router.
2. If this does not work, contact your Internet Service Provider for more information.

Unable to connect to the network

Do the following:

1. Check all **IP Settings**.
2. Ensure that the DHCP server is enabled on the router. Then, unplug the router and plug it back in.
3. If this does not work, contact your Internet Service Provider for more information.

Connected to a local network, but not to the Internet

1. Make sure that the Internet LAN cable is connected to the router's external LAN port.
2. Check the DNS values in the **IP Settings**.
3. If the problem persists, contact your Internet Service Provider.

Network setup is complete, but unable to connect to the Internet

If the problem persists, contact your Internet Service Provider.

Troubleshooting Wireless Internet Connectivity Issues

Wireless network connection failed

Selected wireless router not found. Go to **Network Settings** and select the correct router.

Unable to connect to a wireless router

Check the following:

1. Check if the router is turned on. If it is, turn it off and on again.
2. Enter the correct security key if required.

IP auto setting failed

Do the following or configure the **IP Settings** manually.

1. Make sure that the DHCP server is enabled on the router. Then, unplug the router and plug it back in.
2. Enter the correct security key if required.
3. If this does not work, contact your Internet Service Provider for more information.

Unable to connect to the network

Do the following:

1. Check all **IP Settings**.
2. Enter the correct security key if required.
3. If this does not work, contact your Internet Service Provider for more information.

Connected to a local network, but not to the Internet

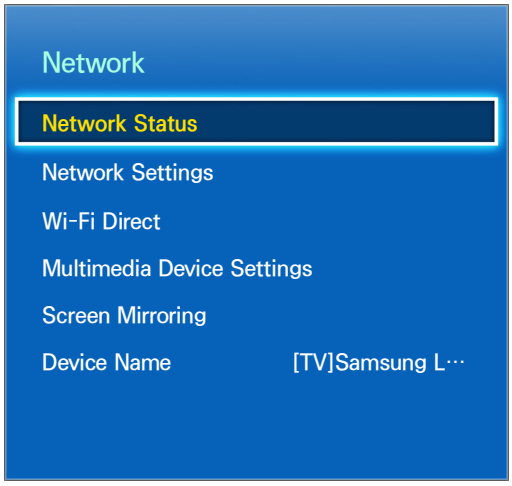
1. Make sure that the Internet LAN cable is connected to the router's external LAN port.
2. Check the DNS values in the **IP Settings**.
3. If the problem persists, contact your Internet Service Provider.

Network setup is complete, but unable to connect to the Internet

If the problem persists, contact your Internet Service Provider.

Checking the Internet Connection Status

MENU > **Network** > **Network Status** Try Now



The screen shown may vary depending on the model.

View the current network and Internet status.

Smart Hub

MENU > Smart Hub > Open Smart Hub Try Now

With Smart Hub, you can surf the web, download apps. In addition, you can enjoy photo, video, and music files stored on external storage devices.

- Some of the Smart Hub services for pay services. To use a for pay service, you must have an account with the service provider or a Samsung Apps TV account. Refer to the "Using Smart Hub with a Samsung Account" section for more information about a Samsung account.
- The TV must be connected to the Internet in order to use Smart Hub.
- Smart Hub features may not be available depending on the service provider, language, or region.
- To use Smart Hub, you must agree to the end user agreement and privacy policy. Otherwise, you will not be able to access the features and services associated with them. You can view the entire content of the **Terms & Policy** by navigating to **Smart Hub** > **Terms & Policy**. If you want to stop using Smart Hub, you can cancel the agreement. Try Now

Testing Smart Hub connections

MENU > Support > Self Diagnosis > Smart Hub Connection Test Try Now

If Smart Hub is not functioning, navigate to **Support** > **Self Diagnosis** > **Smart Hub Connection Test**. Diagnose the problem by checking the internet connection, your ISP, the Samsung server and the Samsung Apps panels.

- After completing the test, if Smart Hub continues to have problems, contact your Internet Service Provider or a Samsung Contact Center.

Opening the First Screen

Press the SMART HUB button while watching TV to open the First Screen.

On the First Screen, search through favorite apps, channels or sources and quickly access previously run or frequently used functions.

Setting your favorite item

1. Press the SMART HUB button to open the First Screen, and move to a desired item.
2. Press and hold the ↵ button. The Options menu appears.
3. In the Options menu, select Add to Favorites to add the selected item to the favorite list, which will move top of the list.

   To delete a favorite item, select it and press and hold the ↵ button to display the context menu. Then, select Remove.

Deleting browsing history

1. Press the SMART HUB button to open the First Screen, and select Reset. You will be asked to confirm your selection.
2. Select Yes on the screen. Your browsing history is deleted completely.

   However, the Favorites list items will not be deleted.

   You can also delete your browsing history by selecting Reset in the Smart Hub > First Screen Settings menu.

Moving to the Panel Screen

Press the SMART HUB button to launch Smart Hub. Select an icon on top of the screen to use the services of the corresponding panel.

- SAMSUNG APPS

  You can enjoy variety of free and for pay news, sports, weather, and gaming apps on the TV as you would on a smart phone or tablet.

Using the Smart Hub Tutorial

MENU > Support > Smart Hub Tutorial

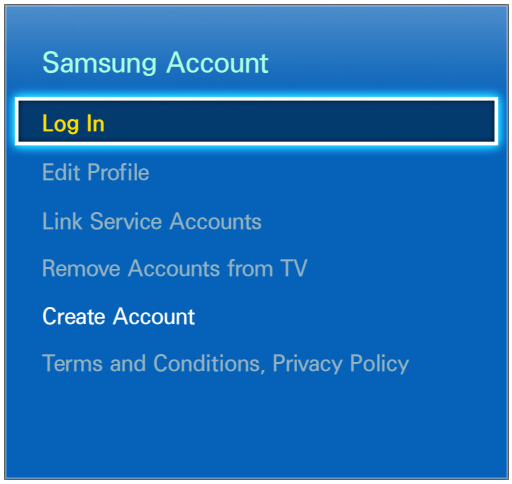
Select Support > Smart Hub Tutorial. This will familiarize yourself with the basics of Smart Hub and panels.

Resetting Smart Hub

MENU > Smart Hub > Smart Hub Reset

It is possible to remove Samsung accounts and everything linked to them, including apps, from the TV. Enter the password when accessing this menu.

Using Smart Hub with a Samsung Account



The screen shown may vary depending on the model.

Creating a Samsung Account

MENU > Smart Hub > Samsung Account Try Now

Some of the Smart Hub services are paid services. To use a for pay service, you must have an account with the service provider or a Samsung Apps TV account (a Samsung account).

You can create a Samsung account using your email address as your ID.

To create a Samsung account, you must agree to the Samsung account end user agreement and privacy policy. Otherwise, you cannot create a Samsung account. You can view the entire content of the agreement by navigating to Smart Hub > Samsung Account > Terms and Conditions, Privacy Policy.

Alternatively, you can create a Samsung account at http://content.samsung.com. You can use one ID for both the TV and the website.

Creating a Samsung Account using Sign Up Samsung Account Menu

1. Navigate to **Smart Hub** > **Samsung Account** > **Create Account** and select **Create Samsung Account**.
2. Agree to use a Samsung account and select **Next**.
3. Create a Samsung account according to the instructions on the **Create Account** screen.
4. Once a Samsung account is created, you are automatically logged in to Smart Hub.

Creating a Samsung Account using a Facebook Account

A Facebook user can easily obtain necessary information from Facebook and create a Samsung account.

1. Navigate to **Smart Hub** > **Samsung Account** and select **Log In**. The **Sign In** screen appears.
2. Select **+** and select the **Create with Facebook** on the Sign In screen.
3. Enter your Facebook ID and password and select **Sign In**.
4. Agree to use a Samsung account and select **Next**.
5. Create a Samsung account according to the instructions on the **Create Account** screen.
6. Once a Samsung account is created, you are automatically signed in.

If you create a Samsung account using your Facebook account, they are automatically linked.

Signing in to a Samsung Account

MENU > Smart Hub > Samsung Account > Log In

Logging Into and Saving a Samsung Account on the TV

1. Navigate to Smart Hub > Samsung Account and select Log In.
2. Select + and select Sign In on the Sign In screen.

   If you save your Samsung account on the TV, you can easily sign up later on.
3. Enter your ID and password and then select Sign In.

   Check the Sign me in automatically option if you wish to log into Smart Hub automatically.

   If you forgot your password, select Reset Password to receive the password resetting instructions via email.
4. Agree to use a Samsung Account and select Next.
5. Select an image to be used as the profile picture.
6. The Samsung account has been saved on the TV. Select Done to log into your Samsung account.

Easily Logging Into Your Samsung Account Saved on the TV

1. Navigate to Smart Hub > Samsung Account and select Log In.
2. Choose your Samsung account on the Sign In and select Sign In.
3. Using the login method configured for the selected Samsung account, log into your Samsung account. To change the login method, refer to the "Changing and Adding Information to Samsung Account" section.

Linking Your Samsung Account to External Service Accounts

MENU > Smart Hub > Samsung Account > Link Service Accounts

Linking your Samsung account to an app account of the app installed on the TV lets you automatically log into your linked app accounts when you log into your Samsung account. For example, you can download the Facebook app and link your Facebook account to your Samsung account. In this case, logging into your Samsung account then automatically logs you into your Facebook account as well.

To use **Link Service Accounts**, you must first log into your Samsung account.

Linking a Service Account

1. Navigate to **Smart Hub** > **Samsung Account** and select **Link Service Accounts**. The available apps that can be linked to your Samsung account are listed.
2. Select an app from the list. The Link to other accounts window appears on the screen.
3. Enter the current ID and password of the app to log in and select **OK**.
4. When the login is complete, the app account is linked to the Samsung account.

Disconnecting a Linked Account

1. Navigate to **Smart Hub** > **Samsung Account**, select **Link Service Accounts**. Select an app to unlink.
2. A confirmation dialog box appears. Select **Yes** to unlink the app.

Changing and Adding Information to Samsung Account

MENU > Smart Hub > Samsung Account

Using the Samsung Account menu, you can manage your Samsung account.

To change the account information, you must be logged into your Samsung account.

1. Navigate to Smart Hub > Samsung Account and select Edit Profile. The keyboard appears.
2. Enter your password, and then select Done. The Edit Profile screen appears.

The Edit Profile screen lets you do the following:

- **Changing Profile Picture**

  If you select Edit Profile Picture on the login screen, you can change the profile image.

- **Choosing a Samsung Account Login Method for TV**

  Select Sign-in Method on the login screen and choose a login method. You can determine how to log into the TV with the saved Samsung account.

- **Turn Auto Login On or Off**

  Select Sign me in automatically from the login screen and select the checkbox. Then, you are automatically logged into the TV with your Samsung account when the TV is turned on.

- **Entering Basic User Information**

  You can enter your given name, surname, and date of birth.

- **Add a Credit Card to Your Samsung Account**

  Select Add Card to add a credit card to your Samsung Account. Adding a credit card to your account makes it easier to purchase online movies and TV shows. Follow the easy directions on the screen.

  This function is only available on certain models in specific geographical areas.

- **Setting Newsletter Subscription**

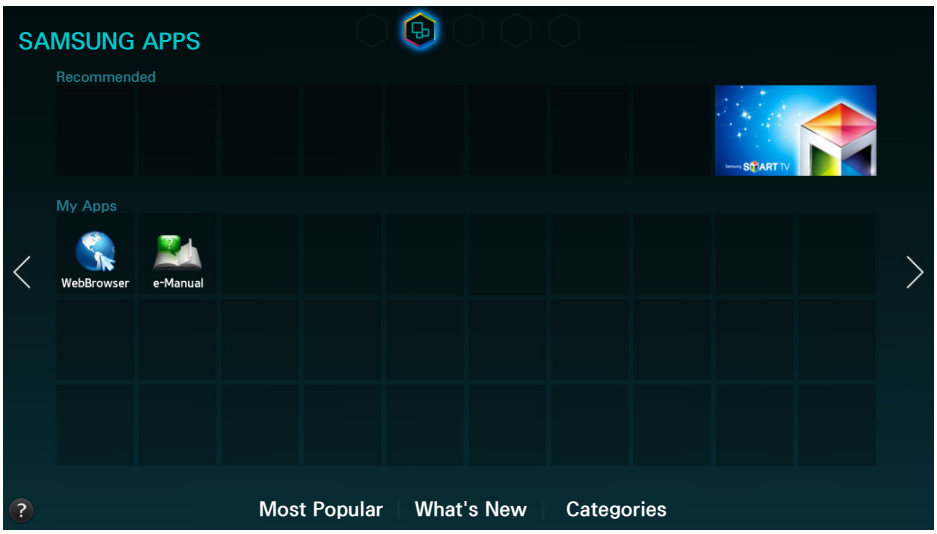
  You can determine whether to subscribe to the newsletter containing the latest information.

Deleting All Samsung Accounts from the TV

MENU > Smart Hub > Samsung Account > Remove Accounts from TV

Navigate to Smart Hub > Samsung Account and select Remove Accounts from TV. The account and password information saved on the TV is deleted, and the account information of any linked apps are also deleted.

Using the SAMSUNG APPS Panel



The screen shown may vary depending on the model.

Availability depends on the specific model and area.

Smart Hub offers a variety of free news, sports, weather, and gaming content you can directly install and enjoy on your TV as you do on your smartphone or tablet.

Before you use **SAMSUNG APPS**, check if the TV is connected to the Internet. Your TV must be connected to the Internet in order to use **SAMSUNG APPS**.

When the Smart Hub is launched for the first time, the default apps are automatically installed. The default apps may differ depending on the region.

Using Supported Features via the Pop-Up Menu - Downloaded Apps

Move the focus to an app in the second row or below, and then press and hold the ↵ button. The Tools menu appears displaying the following functions.

- **Move**

  Lets you relocate an app on the screen.

- **Delete**

  Lets you remove a selected app from your TV.

- **Multi Delete**

  Lets you remove multiple apps from the TV.

- **View Details**

  Displays detailed information about a selected app.

- **Change View**

  You can change view mode sort by **Custom** or **Most Played**.

- **Lock/Unlock**

  You can lock or unlock a selected app from the screen.

- **Update apps**

  Displays a list of apps that have updates available. You can select which apps to update.

Installing an App

- When the TV's internal memory is insufficient, you can install an app on a USB device.
- You can view icons for the apps saved on the USB device on the **SAMSUNG APPS** screen only when the device is connected to the TV. You can use an app installed on a USB device only when the USB device is connected to the TV. If the USB device is disconnected while the app is running, the app is terminated.
- You can use the app installed on the USB device on another PC or TV.

Quick Installation

1. On the **SAMSUNG APPS** screen, select **Most Popular**, **What's New**, or **Categories**.
   - The **Most Popular** and **What's New** show the most popular and new Samsung Apps. To view the entire app list, select **Categories**. You can view all Samsung Apps classified by genre.
2. Move the focus to an app, and then press and hold the ↵ button. A pop-up menu appears.
3. On the pop-up menu, select **Download**.
   - Most apps are free to install.
   - While an app is being installed, the progress bar appears so that you can easily figure out the installation progress.
4. The selected app is installed on the TV.
   - You can view installed apps on the **SAMSUNG APPS** screen.

Installing an App in the Detailed App Information Screen

1. On the **SAMSUNG APPS** screen, select **Most Popular**, **What's New**, or **Categories**.
   - The **Most Popular** and **What's New** show the most popular and new Samsung Apps. To view the entire app list, select **Categories**. You can view all Samsung Apps classified by genre.
2. Select an app from the list. Detailed information about your selection appears on the screen.
3. Select **Download** on the detailed information screen to install the selected app on the TV.
   - Most apps are free to install.
   - While an app is being installed, the progress bar appears so that you can easily figure out the installation progress.
4. When the installation is complete, the **Download** button turns to **Open**.
   - You can view installed apps on the **SAMSUNG APPS** screen.

Launching an App

Select an app on the SAMSUNG APPS screen to launch it.

The icons indicate the following:

- : The app is installed on a USB device.

Using the e-Manual App

Launching the e-Manual

MENU > Support > e-Manual

The embedded e-manual contains information about your TV's key features.

Alternatively, you can download a copy of the e-manual from Samsung's website, and read it on your computer or print it out.

Words in yellow (e.g., Picture Mode) indicate a menu item and bold words in white (e.g., Smart Hub) indicate remote control buttons.

Arrows are used to indicate the menu path. (Example: MENU > Picture > Picture Mode)

1. Press the E-MANUAL button. You can also select Support > e-Manual in the TV's menu. The e-Manual is loaded on the screen.
2. Select a category from the left side of the screen. Once a selection has been made, the contents of the selected category appears on the right side of the screen.
3. Select an item from the list. This opens the e-manual on the corresponding page.

If a description doesn't fit on a single screen...

Scroll pages using one of the following methods.

- Position the focus on the page to display / on the screen and move ▲ or ▼ to scroll through the page.

Loading Pages using Keywords

Select **Search** from the screen to bring up the search screen. Enter a search term and then select Done. Select an item from the search results to load the corresponding page.

Loading Pages from the Index Page

Select **Index** to bring up the index screen. Select a keyword from the list to navigate to the relevant page.

Using History to Load Previously Read Pages

Select **Opened page**. A list of previously read pages is shown. Select a page. The e-Manual jumps to the selected page.

Accessing the Menu from the e-Manual

Select Insert space. (Try Now) from the right side of a feature-description page to access the corresponding menu and try out the feature right away. If you want to read the e-Manual entry on a specific screen menu feature:

– Press the E-MANUAL button to load the corresponding e-Manual page.

Certain menu options cannot be used.

Loading Reference Pages

Select (Link) from the right side of a feature-description page to access the corresponding reference page.

Updating the e-Manual to the Latest Version

You can update the e-Manual in the same way you update apps.

1. Press the SMART HUB button to open the First Screen, and then select the Panel icon. The Panel screen appears.
2. Go to the SAMSUNG APPS screen and the highlight the e-Manual.
3. Press and hold the button. The Tools menu appears.
4. Select Update apps from the Tools menu. A pop-up window appears.
5. Select e-Manual in the pop-up window and then select Update. To update the e-Manual to the latest version.

Configuring Auto Update

MENU > Smart Hub > Apps Settings

To update the e-manual automatically, navigate to the Smart Hub > Apps Settings menu and set the Auto Update option to On. The e-manual is updated automatically when an update becomes available.

Using Web Browser App

Web Browser is an Internet browsing app. Using Web Browser, you can surf the Internet on the TV in the same manner as you would using a PC – even while watching a TV program using PIP.

- Use a keyboard and mouse for a more convenient web browsing experience.
- The browsing page may differ from that on a PC.

Browsing Methods

Web Browser provides two browsing methods: **Pointer Browsing** and **Link Browsing**. **Pointer Browsing** enables you to move the pointer for selection while **Link Browsing** allows using the direction arrows to move the focus.

The default browsing method of Web Browser is **Pointer Browsing**. To enable **Link Browsing**, select the icon.

Command and Status Bar at a Glance

Open the Web Browser to display the command and status bar at the top of the screen. The following items are available:

- **Back**

  Move to the previous page.

- **Forward**

  Move to the next page.

- **Bookmarks & History**

  Move to the **Bookmarks & History** screen. On this screen, add the current page to Bookmarks, or move, edit, or delete a bookmarked page. Easily access visited pages by navigating the History screen.

- **Home Page**

  Move to the main screen.

- **Address Bar**

  Check the address of the current page, or enter a web page address to move to the page.

- **Refresh** / **Stop**

  Reload the current page or stop reloading the current page.

- **Add to Bookmark**

  Add the current page to Bookmarks.

- **Search**

  Make a keyword search using the user-specified search engine.

  > To change the search engine, select the icon and then select a search engine in the **Set Search Engine** menu.

- **Zoom**

  Zoom in or out of the current web page.

- **PIP**

  Use Web Browser while watching a TV program on the same screen.

  > Availability depends on the specific model.

- **Link Browsing** / **Pointer Browsing**

  Select one from two browsing methods supported by Web Browser.

- **Setting**

  Configure the Web Browser settings.

- **Close**

  Exit Web Browser.

- **New Tab**

  Open a new tab.

Browsing Preferences

Select the item on the screen. Configure the browsing settings to your needs or convenience.

Some items may not be available depending on the web page. Unavailable items are grayed out.

- **Approved Sites**

  To prevent children from accessing inappropriate web pages, limit access to pre-registered web pages.

  You will be asked to enter a password when selecting **Approved Sites**. Enter the password. The default password is 0000.

  Approved Sites feature: Enable/disable the **Approved Sites feature**.

  Reset password for Approved Sites: Change the password.

  Add current site: Add the current web page to **Approved Sites**.

  Manage Approved Sites: Enter the address of the web page that you want to add to **Approved Sites**, or select one from the list and delete it.

  Enabling the **Approved Sites feature** with no web page listed will restrict access to any web page.

- **Private Browsing On** / **Private Browsing Off**

  Enable/disable the **Private Browsing** feature. Enabling **Private Browsing** will not save the browsing history.

  When enabling **Private Browsing**, the icon appears at the start of the address bar.

- **PIP Settings**

  Configure the PIP settings.

  This is available only if watching TV in PIP mode.

  Position: Select the position of the sub picture.

- **Set Search Engine**

  Set the default search engine from the list.

- **Web Browser Setting**

  Configure the **Web Browser Setting**, such as browsing behaviors or security.

  Set as homepage: Select a web page and set it as the homepage.

  Pop-up Block: Block or unblock pop-up windows.

  Page Block: Block or unblock pages such as commercial pages. Manage a list of pages to block by entering the address of a web page.

  General: Delete browsing history or Internet usage information, or reset Web Browser. Use Privacy Browsing to restrict access by malicious codes or phishing sites.

  Privacy & Security: Prevents you from accessing inappropriate web pages or sets not to save the browsing history.

  Encoding: Set the encoding to Auto, or select an encoding method from the list.

  Pointer: Adjust the pointer speed in Pointer Browsing mode, or change the link access method.

  Browser Information: Check the current version of Web Browser.

- **Help**

  This will familiarize yourself with the basics of Web Browser.

Rearranging Apps on the SAMSUNG APPS Screen

1. On the SAMSUNG APPS screen, move to the app you wish to change the order.
2. Press and hold the ↵ button. A pop-up menu appears.
3. On the pop-up menu select Move.
4. Move an app to a desired location and select the app again.

Deleting an App from the TV

If an app is deleted, the data related to the app is also deleted.

Deleting an App

1. On the SAMSUNG APPS screen, move to the app you wish to remove.
2. Press and hold the ↵ button. A pop-up menu appears.
3. On the pop-up select Delete. A removal confirmation window appears.
4. Select Yes. The selected app is removed.

Removing Multiple Apps

1. On the **SAMSUNG APPS** screen, move to the app you wish to remove.
2. Press and hold the ↵ button. A pop-up menu appears.
3. On the pop-up select **Multi Delete**. A check box appears on the app icons.
4. Select all the apps you wish to remove and then select **Delete**. A removal confirmation window appears.
5. Select **Yes**. The selected app is removed.

Rating/Reviewing an App

On the detailed app information screen, you can rate the app or send a review to the app developer.

To rate or review an app, you must log into your Samsung account. You can only rate or review with a TV purchasing apps and games.

Updating an App

1. On the SAMSUNG APPS screen, move to the app you wish to update.
2. Press and hold the ↵ button. A pop-up menu appears.
3. On the pop-up select Update apps. A pop-up window appears.
4. Select all the apps you wish to update and then select Update. All the selected apps are updated to the latest version.

Setting Auto App Update

To update apps automatically, navigate to Smart Hub > Apps Settings and set Auto Update to On. The apps will then be updated automatically when an update becomes available.

SAMSUNG APPS Features

MENU > Smart Hub > Apps Settings Try Now

You can configure the features related to the apps installed on your TV.

Setting Push Notification

The Push notification function enables apps installed on the TV to send alarm messages notifying users of news, messages, etc.

1. Navigate to Smart Hub > Apps Settings > Push Notification Settings and set the Push Notification to On.
2. Set the desired apps below the Push Notification to On to allow them to send push notifications. The push notification function of the selected app is activated.

   The Push Notification app list only the apps that supports Push Notification Settings from among the apps installed on the TV.

Using an App while Watching TV

If an app linked to a channel is installed on the TV, you can view the program information and use the related service through the app while watching TV.

Navigate to Smart Hub > Apps Settings and set Channel-Bound Apps to On.

You can use this feature only when an app supporting Channel-Bound Apps is installed on the TV.

Using the Multimedia (Playing Photos, Videos, and Music)

- However, you cannot play media content if the content is not supported by the TV. For more information, refer to "Read Before Playing Photo, Video, or Music Files".
- Backup important files before connecting a USB device. Samsung is not responsible for damaged or lost files.

Playing Media Content Saved on a USB Device

1. The USB devices connected to the TV are listed.
2. Select the device you want to connect to. The folders and files in the selected USB are listed.
3. Select the media content you want to play from the list. The media content plays.

   - Alternatively, navigate to the media content you want to play, and then ► button to play the content.

- If you connect a USB device to the TV while watching the TV, a pop-up window appears on the screen so that you can easily navigate the folders and files of the USB device.
- Alternatively, if you select a USB device on the **Source** screen, a pop-up window appears on the screen so you can easily navigate the folders and files of the USB device.

Safely Removing a USB Device

1. Press the SOURCE button. The Source screen appears.
2. Navigate to the USB device you want to remove. Press and hold the ↵ button on a standard remote. An options window appears.
3. Select **Remove USB** in the list.

Playing Multimedia Content Saved on a Computer/Mobile Device

Allowing Connection with a Computer/Mobile Device

To play multimedia content in a computer or mobile device on the TV, you need to allow the connection with the computer on the TV.

1. Select **Multimedia Device Settings** from the **Network** menu. Storages devices connected to the same network of the TV are listed.
2. Allow connection with the desired device you wish to connect to the TV. You can only play media files from devices that have been allowed to connect to the TV.

   If a computer or mobile device requests to connect to the TV and play media content, connection allowance confirmation window appears on the TV so that you can easily connect the computer or mobile device to it.

When Connected Through the Home Network

- To connect a computer through home network, refer to "Connecting to a Computer" section.
- To connect a mobile device through home network, refer to the "Connecting to a Mobile Device" section.
- However, the content shared by a computer of a mobile device may not play depending on the encoding type and file format of the content. In addition, some functions may not be available.
- The multimedia content may not smoothly play depending on the network status. If this is the case, use a USB storage device.

1. Select **Multimedia Device Settings** from the **Network** menu. The devices connected to the TV are listed.
2. Select a device connected through home network. The folders and files shared by the selected device will be listed.
3. Select media content you wish to play from the list. The media content plays.

   Alternatively, move to the media content to play and press the ► button to play the content.

Buttons and Functions Available While Viewing Photos

The TV displays the buttons below when you press the ↩ button while viewing photos from a multimedia source. The playback buttons will disappear if the RETURN button is pressed.

- **Pause** / **Play**

  Start or stop the slideshow. Using slideshow, you can play all the photos in a folder one by one.

- **Previous** / **Next**

  View the previous or the next photo.

- **Settings**

  The following functions are available when you select the Settings button.

Function	Description
Slideshow Settings	Speed: Set the slideshow speed. Effects: Apply transition effects for the slide show.
Rotate	Rotate the photo.
Zoom	Zoom in by up to a factor of 4.
Picture Mode	Change the Picture Mode setting.
Background Music	Listen to background music while viewing photos. ✎ The music file must be saved in the same device as the photo file. ✎ When background music plays, the mini player appears on the screen. Using the mini player, you can pause the current music or play another music file.
Sound Mode	Change the Sound Mode setting. ✎ This option is supported only when background music is playing.
Select Speakers	Choose a speaker to play the background music. ✎ This option is supported only when background music is playing.
Send	This function is the same as the 'Copy' function of a computer. Using this function, you can send the current photo to another storage device. ✎ For the supported storage devices for this feature, refer to "Sending Files between Storage Devices Table".
Information	View detailed information about the current photo.

Buttons and Functions Available While Viewing Videos

The TV displays the buttons below when you press the ↵ button while viewing videos from a multimedia source. The playback buttons will disappear if the RETURN button is pressed.

- **Pause** / **Play**

  Pause or play the video.

  When the video is paused, you can use the following functions. However, audio will not be heard while the video is paused.

  – **Step**: Whenever you press the ⏸ button, it scans the paused video one frame at a time.

  – **Slow Motion**: Select the ⏩ button to play the video in slow playback speed (1/8, 1/4, 1/2).

- **Rewind** / **Fast Forward**

  Rewind or fast forward the video. Repeatedly select the button to make the rewind/fast forward speed faster by up to 3 times. To restore normal playback speed, select ▶.

- **Previous** / **Next**

  Select the ⏮ button twice to play the previous video. Selecting ⏮ once reloads the current video from the beginning.

  To play the next video, select the ⏭ button.

- **Settings**

  The following functions are available when you select the Settings button.

Function	Description
Select Scene	Thumbnails: Select a scene and play the video from the scene. Thumbnails is not available when 1) the thumbnail of the video is not extracted yet, 2) the video contains audio only or 3) the video play time is shorter than 10 seconds. Chapter Titles: Select and play another video in the same folder. Time Bar: You can use ◀ or ▶ to scan through the file in 10-seconds intervals or enter a specific time value to jump to that point in the video.
Subtitle	Control the subtitles of the video. Language: Turn the subtitles on or off. Sync: When the video and the subtitles are not synchronized, you can adjust the synchronization. Reset Sync: Reset the subtitle synchronization adjustment to 0. Size: Choose the font size for the subtitles. Encoding: If the subtitles are broken, you can change the encoding language.
Repeat	Set the repeat mode. Repeat One repeats the current program only. Repeat All repeats all programs contained in the folder.
Picture Size	Change the picture size. However, the supported picture size is determined by the video content.
Picture Mode	Change the Picture Mode setting.
Sound Mode	Change the Sound Mode setting.
Select Speakers	Choose a speaker to play the audio.
Audio language	Choose a desired audio language. This option works only when the video supports multi-track sound.
Information	View detailed information about the video.

Buttons and Functions Available While Playing Music

The TV displays the buttons below when you press the ↵ button while playing music files from a multimedia source. The playback buttons will disappear if the RETURN button is pressed.

- **Pause** / **Play**

  Pause or resume the music.

- **Rewind** / **Fast Forward**

  You can rewind or fast forward the music in 3 steps. To restore normal playback speed, select ►.

- **Previous** / **Next**

  Select the ⏮ button twice to play the previous music file. Selecting ⏮ once reloads the current music file from the beginning.

  To play the next music file, select the ⏭ button.

- **Repeat**

  Set the repeat mode. **Repeat One** repeats the current music file only. **Repeat All** repeats all music files contained in the folder.

- **Shuffle**

  Play the music files in order or randomly.

- **Select Speakers**

  Choose a speaker to play the audio.

- **Sound Mode**

  Change the Sound Mode setting.

Functions on the Media Content List Screen

On the media content list screen of a storage device, the following functions are provided.

- **Filter**

  You can view only one type of content - photo, video, or music - saved on a storage device.

- **Options**

  The following options are available when you select the Options button.

  This function is not available when **Filter** is set to **All**.

Function	Description
Slide Show	Start the slide show. You can use this function when the media content type is photo.
Play Selected	Play only content you want from the media content list.
Send	This function is the same as the 'Copy' function of a computer. Using this function, you can send the media content to another storage device. For the supported storage devices for this feature, refer to "Sending Files between Storage Devices Table".
Encoding	If the media content title is broken, you can change the encoding language. This function is available only when the media content is music.
Rename Playlist	You can change the name of the playlist you created. This function is available only when the media content is music.
Delete Playlist	Delete a playlist that you have created. This function is available only when the media content is music.
Add to Playlist	Add a file to a playlist that you have created or create a new playlist. This function is available only when the media content is music.

Digital Broadcast Information at a Glance

MENU > Broadcasting > Guide Try Now

The Guide provides an overview of each digital channel's program lineup. You can check the program schedules and set up a Schedule Viewing.

Press the GUIDE button on the remote to launch the Guide.

The information in the Guide is for digital channels only. Analog channels are not supported.

Using the Guide

To access the Guide functions, press and hold the touch pad. A pop-up window listing the following functions appears.

- **Changing the Channel List**

  If you select Channel Filter, you can change the channels displayed in the channel lists.

- **Navigating the Program Schedule**

  Press the ◀◀ or ▶▶ button to navigate the program schedule by 2 hours. You can only view the future program schedule.

  It is available for moving the page using the ▲ or ▼ button.

- **Moving to the Schedule Manager**

  You can move to the Schedule Manager screen.

- **Adding Favorites**

  Select Edit Favorite Channels to add the selected program to the Favorites.

- **Viewing Detailed Information**

  View detailed information about the selected program. The program information may vary depending on the type of incoming signal and may not be available at all for certain programs.

  – Select a current program on another channel and select View Details to Watch the program.

  – Select an upcoming program and select View Details for Schedule Viewing.

Checking the Current Program Info

While watching TV, select INFO using the remote to view information about the current program.

- To view the program info, you must first set the TV's clock. Go to Clock (System > Time > Clock).
- The program information may vary depending on the type of incoming signal and may not be available at all for certain programs.

Select the current program in the Program Info window to instantly record the program. Press the ◀ or ▶ buttons, you can view the upcoming programs. If you select a desired program you can set the Schedule Viewing for the program.

For more information on Schedule Viewing, refer to "Setting Up a Schedule Viewing".

Changing the broadcast signal

MENU > Broadcasting > Antenna Try Now

You can choose the appropriate DTV mode for your viewing environment. Choose Air or Cable. Air is suitable for homes equipped with a separate, over-the-air antenna. Cable is suitable for homes that have subscribed to a local cable-service or satellite-service provider.

- Do not use this function if your TV is connected to a cable or satellite box.

Digital Channel Signal Info and Strength

MENU > Support > Self Diagnosis > Signal Information Try Now

Select Support > Self Diagnosis > Signal Information. Displays the digital channel's signal information and strength.

- If your TV is attached to a separate, over-the-air antenna, you can use the signal strength information to adjust the antenna for increased signal strength and improved HD channel reception.
- Signal information is only available for digital channels.

Setting Up a Schedule Viewing

Configure the TV to show a specific channel or program at a specific time and date. The icon appears next to programs that have been configured for a Schedule Viewing.

To set up a Schedule Viewing, you must first set the TV's clock. Go to **Clock** (**System** > **Time** > **Clock**).

Setting Up Schedule Viewing

Digital Channel Schedule Viewing

You can set up **Schedule Viewing** for programs on digital channels on the following screens:

- **The Guide Screen**

  Select an upcoming program from the **Guide** to set up a **Schedule Viewing** for it.

- **The Program Info Screen**

  Press the **INFO** button to display information about the current program. From the program information screen, select right button to view information about the next program, and press enter, to set up a **Schedule Viewing** for the upcoming program.

Analog Channel Schedule Viewing

MENU > **Broadcasting** > **Schedule Manager** Try Now

The **Schedule Viewing** function for programs on analog channels can be set up by specifying the time and date.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select **Schedule** from the **Schedule Manager** to bring up a pop-up menu. Select **Schedule Viewing**.
3. Specify the **Antenna**, **Channel**, **Repeat**, and **Start Time** options for the program you want to watch and then select **OK** to finish.

Managing the Schedule Viewing List

MENU > Broadcasting > Schedule Manager

You can change the settings of Schedule Viewing sessions or cancel scheduled sessions altogether.

Deleting Schedule Viewing Sessions

You can delete Schedule Viewing sessions.

1. Select Broadcasting > Schedule Manager.
2. Select a session from the Schedule Manager. A pop-up window appears.
3. Select Delete. This cancels the selected viewing session.

Editing Schedule Viewing Sessions

1. You can change the settings of Schedule Viewing sessions. Select Broadcasting > Schedule Manager.
2. Select a session from the Schedule Manager. A pop-up window appears.
3. Select Edit and change the settings of the selected session.
4. Once finished, select OK. This applies the changes you made to the selected viewing session.

Using the Channel List

MENU > Broadcasting > Channel List Try Now

Press the CH LIST button while watching TV to bring up the Channel List and change the channel or check programs on other digital channels.

Select a channel from the Channel List to jump to it right away. To quickly scroll through the list, use the channel up/down buttons. This moves the focus one page at a time.

The Channel List screen contains the following icons:

- A : An analog channel
- : A favorite channel
- : A locked channel

- **Using Options**

  Press the ◀ button, and then select Options. The following options are available:

Function	Description
Antenna	Choose Air or Cable as the DTV mode. Air is suitable for homes equipped with separate, over-the-air. Cable is suitable for homes that subscribe to a local cable-service or satellite-service provider.
Genre	Sort the list so that it includes channels of a selected genre only. You can only use Genre if you have set the channel mode in the Channel List to Added Ch. and only if the added channels contain genre information. This function is not available on all models.
Edit Favorites	Designate favorite channels. Refer to the "Creating a Personal Favorites List" section for more information.

- **Viewing the Added Channels or Favorites Lists**

  Press the ▶ button, and then select Added Ch. or Favorites. Favorites will only appear if you have registered at least one favorite channel. For more information, refer to "Creating a Personal Favorites List".

Registering, Removing, and Editing Channels

MENU > Broadcasting > Edit Channel Try Now

Remove channels from the index of channels, restore removed channels, and rename analog channels. The Edit Channel screen icons indicate the following:

- A : An analog channel
- : A favorite channel
- : A locked channel

Registering and Removing Channels

MENU > Broadcasting > Edit Channel

Removing Registered Channels

Remove registered channels from the index.

1. Select the channels you want to remove. Unselect channels by choosing them again. To select all the channels, select Options and then select Select All from the list.
2. Once you have made your selection, select Delete from the left of the screen to remove the selected channels.

Adding Back Removed Channels

You restore channels to the index of channels by adding them back. Removed channels are displayed in gray in the All list only. In addition, the Add option is only available for removed channels.

1. Select Options to display a list of options. Select Category from the list, and then select All.
2. From the All list, select the channels you wish to restore. Unselect channels by choosing them again. To select all the channels, select Options and then select Select All from the list.
3. Once you have made your selection, select Add to restore the channels.

Editing Registered Channels

MENU > Broadcasting > Edit Channel

Select Options at the bottom left of the screen to access the following options. The available options may vary depending on the broadcast signal.

- Select All

  Selects all channels displayed the Edit Channel screen.

- Antenna

  Choose Air or Cable as the DTV mode.

  Availability depends on the specific area.

- Category

  Channels stored in the TV are grouped into the following categories: All and Added Ch..

- Edit Favorites

  Designate favorite channels. For more information, refer to "Creating a Personal Favorites List".

- Rename Channel

  Rename analog channels. The new name can be up to 5 characters long.

- Information

  View detailed information about the current program.

Program Rating Lock

MENU > Broadcasting > Program Rating Lock

The Program Rating Lock blocks programs with ratings higher than those desired. This is useful for controlling what children watch on TV. This will not function for programs originating from external sources, such as DVD players or USB files.

This PIN is required to watch a blocked program.

The Program Rating Lock is available only in TV mode.

Creating a Personal Favorites List

MENU > Broadcasting > Edit Favorites Try Now

You can designate frequently watched channels as favorite channels. Favorite channels are highlighted in the Edit Channel and Channel List screens with the 💚 symbol. You can create up to 5 favorite channel lists.

Registering Channels as a Favorites

MENU > Broadcasting > Edit Favorites

Registering the Current Channel as a Favorites

Add the current channel to a Favorites list.

1. While watching a TV channel, press the TOOLS button. Select Edit Favorites from the list.
2. From the pop-up window, select all the Favorites lists you want to add the current channel to and then select OK.
3. This adds the current channel to the selected Favorites list(s). Select OK.

Registering Multiple Channels as Favorites

It's possible to register multiple channels as favorites at the same time.

1. Select **Broadcasting** > **Edit Favorites**.
2. Select the channels from the list in the middle of the screen.
3. Select **Change Fav.** and then change the Favorites list on the right side of the screen to the Favorites list you want to use.
4. Select **Add** on the screen. The TV adds the channels you selected to the Favorites list you chose.

Viewing Favorites List Channels Only

It's possible to flip through Favorites list channels using only the channel up/down buttons.

A Favorites list can only be selected if it contains at least one favorite channel.

1. Run **Channel List**. (**Broadcasting** > **Channel List**).
2. Press the ▶ button to select **Favorites 1** through **Favorites 5**.
3. Choose a channel from the selected Favorites list. This changes the channels and **Channel List** changes to the selected Favorites channel.

Editing a Favorites List

MENU > Broadcasting > Edit Favorites

You can rename and edit Favorites lists.

Edit Favorites Screen Menu Items

Select Options on the Edit Favorites screen to access the following options:

- Copy to Favorites

  Copy channels from one favorite channels list to another. Refer to the "Copying a Favorites List to a Different Favorites List" section for more information.

  You can use Copy to Favorites only if you have registered one or more channels to at least one Favorites list.

- Rename Favorites

  Rename an existing favorite channels list. Refer to the "Renaming a Favorites List" section for more information.

  You can use Rename only if you have registered one or more channels to at least one Favorites list.

- Antenna

  Choose between Air and Cable.

- Edit Channel

  Lets you manage the channels saved on the TV. For more information, refer to "Registering, Removing, and Editing Channels".

- Information

  View detailed information about the current program.

Removing Registered Channels from a Favorites List

Remove channels from the favorites list.

1. Select **Change Fav.** at the bottom of the screen and then change the Favorites list to the Favorites list you want to use.
2. Select the channels you want to remove from the selected Favorites list.
3. Select **Delete**.

Rearranging a Favorites List

Rearrange the order of the channels in a Favorites Channels List.

1. Select **Change Fav.** at the bottom of the screen and then change the Favorites list to the Favorites list you want to use.
2. From the selected Favorites list, select the channels you want to rearrange.
3. Select **Change order** from the bottom of the screen and then rearrange the selected channels. Press enter to finish.

Renaming a Favorites List

Rename an existing favorites channels list.

1. Select **Change Fav.** at the bottom of the screen and then change the Favorites list to the Favorites list you want to use.
2. From the selected Favorites list, select the channels you want to rename.
3. Select **Options**. A list appears.
4. Select **Rename Favorites** from the list. A pop-up window appears. Rename the list in the pop-up window. The new name can be up to 20 characters long.

Copying a Favorites List to a Different Favorites List

Copy channels from one favorites channels list to another.

1. Select **Change Fav.** and then change the Favorites list on the side of the screen to the Favorites list you want to use.
2. From the Favorites list displayed on the side of the screen, select all the channels you want to copy.
3. Select **Options**. A list appears.
4. Select **Copy to Favorites** from the list. A pop-up window appears.
5. From the pop-up window that appears on the screen, select the Favorites lists you want to copy the selected channels to. This copies the selected channels to the selected Favorites lists.

> **Copy to Favorites** is only available when there are channels in the Favorites list.

Watching a Sports Game Realistically (Soccer Mode)

MENU > System > Soccer Mode > Soccer Mode

Go to System > Soccer Mode and then set Soccer Mode to On. The picture and sound modes of the TV are automatically optimized for sports events.

Enabling Soccer Mode changes the Picture Mode to Stadium and the Sound Mode to Stadium, and disables some Picture and Sound menus.

Press the TOOLS button to turn Soccer Mode on or off.

TV-Viewing Support Features

Showing Captions

MENU > System > Accessibility > Caption Try Now

You can watch TV broadcasts with captions.

Even if enabled, captions will not be displayed by programs that do not support captions.

Enabling Captions Try Now

Select System > Accessibility > Caption > Caption

The TV cannot control or modify DVD or Blu-ray subtitles. To control DVD or Blu-ray subtitles, use the subtitle feature of the DVD or Blu-ray player and the player's remote control.

Selecting the Caption Mode Try Now

Select System > Accessibility > Caption > Caption Mode to display a list of subtitle modes. Select a subtitle mode. The list of modes may vary depending on the broadcast.

- CC1 ~ CC4 / Text1 ~ Text4

  (Analog channels only) The analog caption function operates in either analog TV channel mode or when a signal is supplied from an external device to the TV. (Depending on the broadcasting signal, the analog caption function may or may not work with digital channels.)

PIP Broadcast Viewing

MENU > Picture > PIP Try Now

Use the PIP ("Picture-In-Picture") function to watch TV in a small window while also watching content from a DVD player, Blu-ray player, computer, or a different external device in the background.

Select Picture > PIP to display the PIP settings screen. The PIP settings screen contains the following options:

- PIP

  Activates/deactivates PIP.

- Antenna

  Choose Air or Cable as the digital channel method.

- Channel

  Select the PIP sub-picture channel.

- Size

  Select the PIP sub-picture size.

- Position

  Select the PIP sub-picture position.

- Sound Select

  Select the audio source.

Choose a broadcast.

- You cannot use PIP while using Smart Hub function.
- Turning off the TV automatically disables PIP.
- Playing a game or using the karaoke feature on the main screen can result in lower PIP picture quality.
- For PIP to work, the main screen's source must be Component or HDMI and the input resolution must be less Full HD (FHD - 1080p). The subscreen supports digital channels only.

Scanning for Available Channels

MENU > Broadcasting > Auto Program Try Now

Automatically scans and indexes all channels received through the TV's antenna input connector.

Do not use this function if your TV is connected to a cable or satellite box.

If the TV has saved channels, Auto Program deletes the existing list, and then saves the newly scanned channels.

1. Select Broadcasting > Auto Program.
2. Select Start when prompted. This initiates the Auto Program function. The process can take up to 30 minutes to complete.

Selecting the Broadcast Audio Options

MENU > Broadcasting > Audio Options Try Now

Configure the program's audio language. Audio Options functions differently for analog and digital channels.

Press the INFO button to view the current broadcast's audio signal information.

Digital Broadcast Audio Options

- Audio Language Try Now

  Select Audio Options > Audio Language and then choose a language. Digital broadcasts contain audio signals in multiple languages. Digital programs that include the language you selected in Audio Language are automatically played using that language. If the language you selected is not supported by the broadcast signal, the TV will use the default audio language broadcast by the TV station.

Analog Broadcast Audio Options

- **Multi-Track Sound** Try Now

  Select **Audio Options** > **Multi-Track Sound**. Configure the audio for the current broadcast. **Multi-Track Sound** can be set to mono or stereo, depending on the broadcast signal or program. However, this option is automatically set to mono if the broadcast signal or program does not support stereo.

  Press the **INFO** button to view the current broadcast's audio signal information.

  While watching TV, press the **TOOLS** button, and then select **Multi-Track Sound**.

Fine-Tuning the Screen

MENU > **Broadcasting** > **Channel Settings** > **Fine Tune** Try Now

Available for analog broadcasts only.

Analog pictures can become shaky and full of noise. If this happens, you can fine-tune the signal and/or reduce noise to clear up the picture.

1. Select **Broadcasting** > **Channel Settings** > **Fine Tune**. An adjustment bar appears on the screen.
2. Press the ◀ or ▶ button to make adjustments. Select **Save** or **Close** to apply the new setting. Select **Reset** to reset the Fine-Tune operation.

Color System

MENU > **Broadcasting** > **Channel Settings** > **Color System** Try Now

Available for analog broadcasts only.

Normally the TV can receive image and sound with good quality when in the mode auto. This mode detects the signal color system automatically. In case of some signal reception with color unsatisfactory, select the **Color System** mode to **PAL-M**, **PAL-N** or **NTSC**.

Changing the Picture Mode and Adjusting the Picture Quality

Choosing the Right Picture Mode for the Viewing Environment

MENU > Picture > Picture Mode Try Now

The following picture modes utilize different contrast and brightness settings to provide the best viewing experience for the environment.

When a PC is connected to the TV, Standard and Entertain modes are only available.

- Dynamic

  If the ambient lighting is too bright and makes the screen blurry, use this mode to make the picture clearer.

- Standard

  This is the default mode suitable for most environments.

- Natural

  This mode is useful for reducing eye strain.

  Availability depends on the specific model.

- Movie

  Appropriate for darkened rooms, for watching movies, and when experiencing eye fatigue. Darkens the screen and reduces glare.

- Entertain

  Sharpens images for a more dynamic viewing experience.

  When a PC is connected to the TV, Entertain mode is available. If Entertain mode is not available, set Edit Name to DVI PC or PC.

- Stadium

  Setting Soccer Mode (System > Soccer Mode) to On automatically configures Picture Mode to Stadium for a more realistic viewing experience.

  Stadium cannot be selected by the user.

Adjusting the Picture Quality for Each Picture Mode

MENU > Picture

Select one of the settings below from the Picture menu to display the slide bar for the selected setting. Adjust the value by pressing the ◀ or ▶ arrow button on your remote. Choose a different setting by pressing the ▲ or ▼ button. Adjusted values are applied to the current source and picture mode.

The Color and Tint (G/R) settings cannot be adjusted when the TV is connected to a computer via an HDMI to DVI cable.

Choose a Picture Mode - Dynamic, Standard, Natural, Movie - and then adjust the settings.

- Backlight Try Now

  Adjusts the brightness of individual pixels. Decreasing the brightness reduces power consumption.

- Contrast Try Now

  Adjusts the screen contrast.

- Brightness Try Now

  Adjusts the overall brightness.

- Sharpness Try Now

  Sharpens or dulls the edges of objects.

- Color Try Now

  Adjusts the overall color saturation.

- Tint (G/R) Try Now

  Adjusts the ratio of green to red. Increase the green value to saturate the greens and the red value to saturate the reds.

Adjusted values are saved by the TV for the current source and picture mode, and remain in effect each time the source and picture mode is selected. Consequently, the TV can have different picture settings for each external source.

Applying the Current Picture Settings to Other Input Sources

MENU > Picture > Apply Picture Mode Try Now

You can apply the picture quality setting that you configured for the TV to all external devices connected to the TV or to the current source only.

To apply the setting to all external devices connected to the TV, select All Sources. To apply the setting to the current input only, select Current Source.

Fine-Tuning Each Picture Mode (Advanced Settings)

MENU > Picture > Advanced Settings Try Now

Select Picture > Advanced Settings to fine-tune how images are displayed on the TV screen for each Picture Mode.

Advanced Settings is only available when the Picture Mode is set to Standard or Movie.

When the TV is connected to a computer via an HDMI-DVI cable, only White Balance and Gamma can be adjusted.

Choose a Picture Mode and then adjust the settings.

- Dynamic Contrast Try Now

  Automatically adjusts the screen contrast. Use this option to achieve the optimal contrast setting.

- Black Tone Try Now

  Adjusts the black color depth.

- Flesh Tone Try Now

  Darkens or lightens skin tones.

- RGB Only Mode Try Now

  Adjusts the red, green, and blue levels individually.

- Color Space Try Now

  Adjusts the range of colors (the color space) that the TV can display. Auto automatically adjusts the color space depending on the input signal. Native applies a range that is wider than the input signal. Custom allows you to adjust the color space manually.

  The availability of Custom depends on the specific model.

- **White Balance** Try Now

  You can adjust the color temperature of the picture to make white objects look white, and the overall picture appear natural. You can adjust each of the 3 color's luminosity with the offset menu and the brightness with the gain menu. To restore the default values, select **Reset**.

- **Gamma** Try Now

  Adjusts the primary color intensity.

- **Motion Lighting** Try Now

  Adjusts the brightness in response to on-screen movements to reduce power consumption.

  This feature is only available when the **Picture Mode** is set to **Standard**.

  Adjusting the **Contrast**, **Brightness**, and other picture quality settings deactivates **Motion Lighting**.

Adjusting the Picture for Easier Viewing (Picture Options)

MENU > Picture > Picture Options Try Now

Select Picture > Picture Options to make additional adjustments for an easier viewing experience.

When the TV is connected to a computer via an HDMI-DVI cable, only Color Tone can be adjusted.

Choose a Picture Mode and then adjust the settings.

- Color Tone Try Now

  Adjusts the color tone. The setting is applied on an individual Picture Mode basis. When you select a new Picture Mode, the TV applies the Color Tone you selected for that mode automatically.

  If the Picture Mode is set to Dynamic, you will only be able to choose Cool or Standard.

- Digital Clean View Try Now

  Reduces static and ghosting caused by a weak signal. Selecting Auto Visualization displays the signal strength at the screen. Green indicates the best possible signal.

  Available by analog channels only.

- MPEG Noise Filter Try Now

  Reduces MPEG noise and improves video quality.

- HDMI Black Level Try Now

  Some external devices connected to the TV via an HDMI cable can have issues such as low black level, low contrast, and dull colors. Use HDMI Black Level to adjust the black level to compensate.

  This is only available when the Input Signal, connected to the TV via an HDMI connector, is set to RGB444.

- Film Mode Try Now

  Optimizes the picture quality for movies. Select this mode for watching movies.

  This feature is only available when you are watching a TV broadcast or when the input signal is AV, Component (480i, 1080i), or HDMI (1080i).

- LED Clear Motion

  Availability depends on the specific model.

  Removes drag from fast scenes with a lot of movement to provide a clear picture.

Picture Support Functions

PIP Broadcast Viewing

MENU > Picture > PIP

Watch video from an external device such as a Blu-ray player on the main screen while viewing a TV broadcast in a picture-in-picture window.

Select Picture > PIP to display the PIP settings window. The PIP settings window contains the following options:

- PIP

  Activates/deactivates PIP.

- Antenna

  Choose Air or Cable as the input source for the PIP sub-picture window.

- Channel

  Selects the PIP sub-picture channel.

- Size

  Selects the PIP sub-picture size.

- Position

  Selects the PIP sub-picture position.

- Sound Select

  Selects the audio source.

Choose a broadcast.

- PIP cannot be used while Smart Hub is active.
- Turning off the TV automatically disables PIP.
- Playing a game or using the karaoke feature on the main screen can result in a lower PIP picture quality.
- For PIP to work, the main screen's source must be Component or HDMI and the input resolution must be less than FHD (Full HD). The subscreen supports digital channels only.

Changing the Picture Size and Position

Choosing the Right Screen Size

MENU > Picture > Picture Size > Picture Size Try Now

Most TV programs and videos are displayed in full screen, but some programs and videos are displayed in sizes that are larger or smaller. You can change the screen size for such programs and videos so that the picture fits the screen better.

Supported screen sizes vary depending on the input signal. Refer to the "Picture sizes and input signals" section for more information about supported screen sizes.

- 16:9

  Set the picture to the 16:9 wide-screen format.

- Zoom1

  Magnify 16:9 pictures vertically. A magnified picture can be moved up and down.

- Zoom2

  Magnify Zoom1 picture even more. A magnified picture can be moved up and down.

- Wide Fit

  Enlarge the aspect ratio of the picture so it fits the entire screen. Enjoy 4:3 images as undistorted 16:9 images.

- 4:3

  Sets the picture to basic 4:3 mode.

- Screen Fit

  Displays the full image without any cutoff.

- Custom

  Magnifies or shrinks 16:9 pictures vertically and/or horizontally. A magnified or shrunk picture can be moved left, right, up, and down.

Adjusting the Screen Position

MENU > Picture > Picture Size > Position Try Now

Adjusts the screen position.

This option is only available with Picture Size set to Zoom1, Zoom2, Wide Fit, or Screen Fit. When the TV is tuned to a digital channel, the screen position cannot be adjusted if the Picture Size is set to Screen Fit.

1. To adjust the screen's position, select Picture > Picture Size > Position. A pop-up window appears.
2. Select Position again from the pop-up window.
3. Press the ▲, ▼, ◀ or ▶ button to move the screen. Once done, select Position and then Close. Select Reset to reset the screen position.

Listening to Audio Only with the Screen Turned Off (Picture Off)

MENU > Picture > Picture Off Try Now

Turns off the screen and plays audio through the speakers only. To turn the screen back on, press any button other than the power and volume buttons.

Resetting the Picture Mode Settings

MENU > Picture > Reset Picture Try Now

Use this option to reset the current Picture Mode to its factory settings. This does not affect the settings of other Picture Mode.

Changing the Sound Mode and Using Sound Effects

Choosing the Right Sound Mode for the Environment

MENU > Sound > Sound Mode Try Now

Sound modes apply preset adjustments to the sound output, optimized for different viewing and listening circumstances.

The sound modes cannot be used when you are listening to audio through external speakers.

- **Standard**

  This is the normal sound mode.

- **Music**

  This mode emphasizes normal music instead of voice.

- **Movie**

  This mode is calibrated to provide the best sound for movies.

- **Clear Voice**

  This mode emphasizes voice.

- **Amplify**

  This mode increases the overall intensity of high-frequency sounds for a better listening experience. It is designed for hearing-impaired listeners.

- **Stadium**

  This is chosen automatically when **Soccer Mode** is turned on under the **System** menu.

Using Sound Effects

MENU > Sound > Sound Effect Try Now

Use sound effects to alter how the TV projects sound.

Sound effects can only be used with the Sound Mode set to Standard.

The sound effects cannot be used when you are listening to audio through external speakers.

Choose a Sound Effect and then adjust the settings.

- DTS TruSurround HD Try Now

  Produces sound that will make you feel like you are sitting in a movie theater or concert hall.

- DTS TruDialog Try Now

  Increases voice intensity to make dialog clearer.

- Equalizer Try Now

  Lets you adjust the speaker balance and make bandwidth adjustments. Select Reset to reset the settings.

Sound Support Functions

Selecting Speakers

MENU > Sound > Speaker Settings > TV Sound Output

This lets you choose which speakers the TV uses for audio output. To listen to the audio through the speakers of a connected receiver or home theater only, select Receiver or Audio Out. To listen to audio through the TV's speakers and the speakers of a connected AV receiver or home theater simultaneously, select TV Speaker. If this causes an echo effect, choose any speaker option other than TV Speaker to mute the TV speakers, or turn off the receiver or home theater.

Using external speakers alone disables the volume button and the mute function. In addition, certain Sound options will are also disabled.

Designating the TV's Installation Type

MENU > Sound > Speaker Settings > TV Installation Type

Specify the TV's installation type. Choose between Wall Mount and Stand to optimize the TV's sound automatically.

Enabling Digital Audio Output

MENU > Sound > Additional Settings Try Now

This Smart TV is SPDIF-enabled. The Sony Philips Digital Interface (SPDIF) provides digital audio output to speakers and various digital devices, including A/V Receivers and home theaters.

- Audio Format Try Now

  Selects the Digital Audio output (SPDIF) format. The available Digital Audio output (SPDIF) formats may vary depending on the input source.

- Audio Delay Try Now

  This setting helps correct timing mismatches between the audio and video tracks when you are watching TV and listening to audio through a digital audio device. Enabling the feature displays a slide bar that you can use to adjust the delay by up to 250ms.

- Dolby Digital Comp

  Availability depends on the specific area.

  Some digital TV progams provide 5.1-channel Dolby audio. This TV converts Dolby audio to stereo audio so that it can play the sound through the TV's speakers. There are two methods to choose from. RF is for better sound at lower volumes, and Line is for higher volumes.

- Auto Volume Try Now

  Because each station has its own set of broadcasting conditions, the volume may fluctuate as the channel changes. The Auto Volume function automatically adjusts the volume of a channel by lowering or raising the sound output. Normal applies a normal level of volume adjustment, whereas Night applies a slightly lower volume level than Normal and is ideal for nighttime TV viewing. To use the volume control of a connected source device, deactivate the Auto Volume function. When using the Auto Volume function with a source device, the device's volume control may not function properly.

Resetting All Sound Settings

MENU > Sound > Reset Sound Try Now

Use to reset all sound settings to the factory defaults.

Setting the Time and Using the Timer

Setting the Current Time

MENU > System > Time > Clock Try Now

Set the clock manually or automatically. Once the clock has been set, you can select the virtual remote panel's INFO to check the current time.

The clock must be reset every time the power is disconnected.

Setting the Clock using Digital Broadcast Info

MENU > System > Time > Clock > Clock Mode Try Now

Set Clock Mode to Auto. The TV automatically downloads the correct time from a digital channel. To enable this option, the TV's Antenna jack must be connected to either an antenna or a cable output and must be receiving digital broadcasts. The accuracy of the time information received may vary depending on the channel and signal. If your TV is connected to a set-top-box or satellite box using HDMI or Component connections, you must set the time manually.

If the Clock is Wrong in Auto Mode...

MENU > System > Time > Clock > Time Offset Try Now

If the time set automatically is incorrect, you can offset the clock in 1-hour increments by as much as -/+ 12 hours. Select System > Time > Clock > Time Offset and offset the clock to the correct time.

Time Offset adjusts the time through a network connections and is only available if the Clock Mode is set to Auto and the TV is connected to the Internet though a local area network.

Time Offset will adjust the time if the TV fails to receive time information through normal digital broadcast signals.

Setting the Clock Manually

Manually enter the time. Set Clock Mode to Manual and then select Clock Set to enter the current time and date.

Clock Set: Set the current Date and Time.

Using the Timers

Using the Sleep Timer

MENU > System > Time > Sleep Timer Try Now

This function automatically shuts off the TV after a preconfigured period of time. Select System > Time > Sleep Timer. You can set the timer up to 180 minutes in 30-minute increments.

Turning On the TV using On Timer

MENU > System > Time > On Timer Try Now

Set the On Timer so that the TV turns on automatically at a chosen time. You can set up three separate On Timer configurations concurrently: On Timer 1, On Timer 2, and On Timer 3. The On Timer is only available if the Clock has been set.

- Setup

  Select Off, Everyday, Mon~Fri, Sat~Sun, or Manual. If you select Manual, you can select the days you want the On Timer to turn on the TV by highlighting each day, and then press the ↵ button.

- Time

  Set the time that the TV turns on automatically. See Manual under Setting the Time for time setting instructions.

- Volume

  Specify the volume the TV will set itself to when it turns on.

- Source

  Select a signal source from the list. This is the source the TV will access when it turns on. If you want to use a USB device, that USB device must be connected to the TV before you start the On Timer set up. To play back media from an HDMI or Component source such as a DVD player, Blu-ray player, or set-top-box, you must leave the device on. It must be on and playing when the TV turns on.

- Antenna

  If you have set the Source to TV, select a broadcast signal source, Air or Cable.

- Channel

  If you have set the Source to TV, select a channel.

- Music / Photo

  If you have set the Source to USB, specify a USB device folder containing music files in the music field and/or a folder containing photos in the photo field. If you select a folder that contains music files and a folder that contains photo files, the TV plays the music files and displays the photos at the same time.

To select (for example) a music folder, follow these steps:

1. Select the music field. The music screen appears.
2. If you have no folders in the USB drive and all your music files are in the root directory, highlight, and then select the Select button. The USB drive is selected and the On Timer screen reappears displaying the name of the USB drive in the music field.
3. If you have folders with music on the USB drive, press the ↵ button on the standard remote. The TV displays all the folders on the drive.
4. Scroll the list of folders until the folder you want appears. Move the highlight to the Select button to the right of the folder. Press the ↵ button. The **On Timer** screen reappears displaying the folder name in the music field.

   If the folder you choose has sub-folders, you can select a sub-folder in the same fashion.
5. If you want, select a photo folder in the same way. Start by selecting the photo field.

This feature will not function properly if the selected USB device does not contain media files or a folder has not been specified.

The slideshow will not start if there is only one image file on the USB device.

Folders with long names cannot be selected.

Always use different folder names for multiple USB devices.

Use a USB memory stick or multi-card reader. The **On Timer** may not work with certain battery-powered USB devices, MP3 players, or PMPs because the TV may take too long to recognize the device.

Turning Off the TV Using the Off Timer

MENU > **System** > **Time** > **Off Timer** Try Now

Set the **Off Timer** to turn the TV off automatically at a specific time. You can set up three separate Off Timer configurations concurrently: **Off Timer 1**, **Off Timer 2**, and **Off Timer 3**. The Off Timer is available only if the **Clock** has been set.

- **Setup**

  Select **Off**, **Everyday**, **Mon~Fri**, **Sat~Sun**, or **Manual**. If you select **Manual**, you can select the days you want the **Off Timer** to turn off the TV by highlighting each day, and then press the ↵ button.

- **Time**

  Set the time that the TV turns off automatically.

Using the Screen Burn Protection and Energy Saving Features

Preventing Screen Burn

MENU > System > Auto Protection Time Try Now

Still images can leave burned-in after-images on the screen if left on the screen for a long period of time. Use Screen Burn Protection to protect the screen. Select System > Auto Protection Time and then choose a time setting from the list. If a still image is shown on the screen for longer than the time you selected, the TV will automatically activate the Screen Burn Protection function to prevent burnt-in after- images.

Using Energy Saving Features

MENU > System > Eco Solution Try Now

Eco Solution adjusts the TV's brightness level and prevents overheating to reduce overall power consumption.

- Energy Saving Try Now

  Select a brightness setting from the list to reduce the TV's power consumption.

- Eco Sensor

  This function is only available on certain models in specific geographical areas.

  Automatically adjusts the TV's brightness level based on the ambient light level to reduce the TV's power consumption. If the Eco Sensor has adjusted the screen's brightness level, you can manually adjust the screen's minimum brightness level by adjusting the Min. Backlight. Changing the Backlight setting while Eco Sensor is running automatically disables Eco Sensor.

- No Signal Power Off Try Now

  Select a time from the list. If no signal is received for the specified duration, the TV will automatically cut off the power to reduce power consumption.

- Auto Power Off Try Now

  If the TV remains turned on for four hours without any user input, the TV will automatically turn off to prevent overheating.

Using Anynet+ (HDMI-CEC)

This function is only available on certain models in specific geographical areas.

Use Anynet+ (HDMI-CEC) to control all external devices that support HDMI-CEC using just the TV's remote control. Note that Anynet+ (HDMI-CEC) only works with the TV's remote control and not with the panel keys.

- Anynet+ cannot be used to control external devices that do not support HDMI-CEC.
- Anynet+ devices must be connected to the TV using an HDMI cable. Some HDMI cables may not support Anynet+ (HDMI-CEC). In this case, you will need to replace the HDMI cable.
- The TV remote control may not function under certain circumstances. If this occurs, select the Anynet+ device again.
- Anynet+ (HDMI-CEC) only works with external devices that support HDMI-CEC and only when those devices are either in standby mode or turned on.
- Anynet+ (HDMI-CEC) can control up to 12 compatible external devices (up to 3 of the same type). With home theater systems, however, the number of systems that can be controlled is limited to one.
- To listen to 5.1-channel audio from an external device, connect the device to the TV via an HDMI cable and the device's digital audio output connector directly to the home theater system.
- A home theater system that has been connected to the TV using an HDMI cable and an optical cable supports 2-channel audio only. 5.1-channel audio is, however, available for digital broadcasts with 5.1-channel audio.

Setting Up Anynet+ (HDMI-CEC)

MENU > System > Anynet+ (HDMI-CEC) Try Now

- **Anynet+ (HDMI-CEC) Try Now**

  Enables/disables Anynet+ (HDMI-CEC). Set to **Off** to disable all Anynet+ related features. Set to On to enable all Anynet+ related features.

- **Auto Turn Off Try Now**

  When set to **Yes**, turns off Anynet + compatible external devices when the TV is turned off.

  Some Anynet + compatible devices do not support this feature.

- **Device search Try Now**

  Search for **Anynet+ (HDMI-CEC)** compatible devices.

Using Anynet+ (HDMI-CEC)

Selecting an External Device

1. Press the TOOLS button. The **Tools** list appears.
2. Select **Anynet+ (HDMI-CEC)** from the list. The **Select Device** screen appears.
3. Select a device and wait for the switch to take place. This process may take up to 2 minutes to complete and cannot be cancelled once started.

Accessing the External Device's Menu

Once the TV has switched over to the selected device, you can access the device's menu using the TV's remote control.

1. Press the TOOLS button. The **Tools** list appears.
2. Select **Anynet+ (HDMI-CEC)** from the list. The following list appears.

   The menu options available in **Tools** may differ depending on the external device.

- **Anynet+ (HDMI-CEC)**

  Displays a list of HDMI-CEC-compliant devices connected to the TV. Select **View TV** to exit Anynet+ (HDMI-CEC), and start watching TV. To switch to the screen of an external device, simply select that respective device.

- (Connected Device) **Menu**

  Display the menu of the connected device. If the target device is a DVD player, the DVD menu is shown.

- (Connected Device) **Tools**

  Displays a list of frequently-used functions available for the device. If the target device is a DVD player, the DVD playback menu is shown.

  Some external devices may not support this option.

- (Connected Device) **Title Menu**

  Displays the title menu of the disc in the connected device. For example, if the target device is a Blu-ray player, the title menu of the disc in the player is shown.

  Some external devices may not support this option.

Updating the TV's Software

MENU > Support > Software Update Try Now

View your TV's software version and update it if necessary.

⚠ DO NOT turn off the TV's power until the update is complete. The TV will turn off and on automatically after completing the software update. All video and audio settings return to the default settings after a software update.

Update now

MENU > Support > Software Update > Update now Try Now

An online upgrade downloads and installs the upgrade software directly from the Internet. Configure the TV to connect to a network and make sure it can access the Internet. Select Online.

Manual Update

Download the latest update file from the Samsung website. Decompress the file and copy it into the root directory of a flash drive. Insert the flash drive one of the TV's USB ports to install the update.

Enabling Automatic Software Updates

MENU > Support > Software Update > Auto Update Try Now

From the Support > Software Update menu, set Auto Update to On. The TV can always keep to the latest software because the TV can update a software internally. It also operates when using the TV.

- While updating, you may experience that the TV functions for using internet may be slower.
- This option requires an Internet connection.
- If you agree to the Smart Hub terms and conditions, Auto Update will be set to On. If you don't want the TV's software updated automatically, set Auto Update (Support > Software Update > Auto Update) to Off.

Protecting the TV from Hacking and malicious code

MENU > System > Smart Security Try Now

When the TV is connected to the Internet, it is vulnerable to hacks and malicious code. Smart Security protects the TV and storage media connected to the TV from such threats.

Navigate to System > Smart Security and set Smart Security to On.

Checking the TV and Connected Storage Media

MENU > System > Smart Security > Scan Try Now

Navigate to System > Smart Security and select Scan. This scans the TV and connected media for the presence of malicious code. If no malicious code was detected, a notification window appears on the screen.

If malicious code is detected...

If malicious code was found, the results of the scan will appear on the screen. This result window displays all malicious code found, and provides options to either quarantine the code or allow them to continue.

1. Select all malicious code to quarantine or allow.
2. Select **Block** or **Allow**. This moves the selected malicious code to the **Isolated List** or **Allowed List**.

   The **Isolated List** displays all blocked malicious code. You can also relocate codes from this list to the Allowed List. Try Now

   The **Allowed List** displays all allowed malicious code. You can also relocate codes from this list to the Isolated List. Try Now

Automatically Scanning when the TV is Powered On

MENU > System > Smart Security > Settings > Auto Scan

Navigate to **System** > **Smart Security** > **Settings** and then set **Auto Scan** to **On**. This automatically scans the TV and connected storage media when the TV is powered on.

Automatically Adding malicious code to the Blocked List

MENU > System > Smart Security > Settings > Move to Isolated List automatically

Navigate to **System** > **Smart Security** > **Settings** and set **Move to Isolated List automatically** to **On**. Malicious code found during the scanning process is automatically added to the Blocked List.

Using Other Functions

Adjusting the Menu Transparency

MENU > System > Accessibility > Menu Transparency Try Now

Navigate to System > Accessibility and adjust the opacity level. Adjust the menu's transparency.

When the High Contrast (System > Accessibility > High Contrast) setting is set to On, menu display is automatically set to opaque and you cannot change the Menu Transparency settings.

White Text on Black Background (High Contrast)

MENU > System > Accessibility > High Contrast Try Now

Navigate to System > Accessibility and set High Contrast to On. This option changes major service screens to white text on black background or change the transparent TV menus to opaque so that text can be more easily read.

Expanding the Smart Hub's Focus Area

MENU > System > Accessibility > Enlarge Try Now

Navigate to System > Accessibility and set Enlarge to On. This zooms in the focused item when you use Smart Hub.

Checking Notifications

MENU > System > Notifications Try Now

Select Notifications from the System menu to view the list of event messages generated by the TV. Notifications appear on the screen when events such as an update release for an app or Samsung Account login/logout occurs.

Select Delete All to delete all notifications.

Select Service Notice to check the SMART TV service notifications in a web browser.

Changing the Menu Language

MENU > System > Menu Language Try Now

Select System > Menu Language and then choose a language from the list. Use this option to change the menu language.

Setting Up a Password

MENU > System > Change PIN Try Now

Set a PIN (Personal Identification Number) to lock channels, reset the TV, and change the TV settings.

1. Select System > Change PIN. The PIN input window appears.
2. Enter a PIN. The default PIN is 0000.
3. Enter a new PIN and then enter it again to confirm it. The PIN change is complete.

If you forget the PIN code, press the buttons in the following sequence which resets the PIN to "0-0-0-0": In Standby mode, press the following buttons on the remote to reset the PIN to 0000: → 8 → 2 → 4 → POWER (on).

Enabling Game Mode

MENU > System > General > Game Mode Try Now

Game Mode optimizes the TV's settings for playing video games on a gaming console such as PlayStation™ or Xbox™.

Game Mode cannot be used for normal TV viewing.

Connect the gaming console before enabling Game Mode. Otherwise, the picture quality may suffer.

The screen may shake a little.

Enabling Game Mode automatically sets the Picture Mode to Standard and the Sound Mode to Movie.

To use a different external device, first disconnect the game console and disable Game Mode.

Locking/Unlocking the Panel Keys

MENU > System > General > Panel Lock Try Now

Use to lock and unlock the TV's front panel buttons (menu, channel, and volume). Select System > General > Panel Lock and lock/unlock the keys.

Showing/Hiding the Samsung Logo while Booting

MENU > System > General > Boot Logo Try Now

Use to enable or disable the Samsung logo display that appears when the TV starts up.

Enabling the AV Color System

MENU > System > General > AV Color System Try Now

Normally the TV can receive image and sound with good quality when in the mode Auto. This mode detects the signal color system automatically. In case of some signal reception with color unsatisfactory, select the AV Color System mode to PAL-M, PAL-N or NTSC.

Available only in AV mode.

Registering the TV as a DivX-Certified Device (Watching Paid DivX Movies)

MENU > System > DivX® Video On Demand Try Now

To watch DivX DRM protected movies on the TV, you must register the TV as a DivX certified device.

- DRM stands for Digital Rights Management and is a technical security mechanism to protect the copyright of the content provider.
- You can watch movies that you have recorded or free DivX movies without registration.
- Visit the DivX website (http://www.divx.com) and log into your user account before registering the TV as a DivX-certified device. If you do not have an account, please create one.

1. Select System > DivX® Video On Demand. A window with a registration code appears on the screen.
2. Visit the DivX website on a computer and click [Register Your Device] under [Support] from the top menu.
3. Enter the registration code shown on the TV's screen in the [Enter your registration code] field.
4. Enter the TV's name in the [Name your device] field and then click [NEXT].
5. Click [DOWNLOAD] and save the [device_name.divx] file.
6. Transfer the [device_name.divx] file from the computer onto a USB device and then plug the USB device into the TV.
7. Play the [device_name.divx] file on the TV to register the TV as a DivX-certified device.

Restoring the TV to the Factory Settings

MENU > Support > Self Diagnosis > Reset Try Now

This option restores all TV settings (excluding the Internet) to the factory defaults.

1. Select Support > Self Diagnosis > Reset. The Security PIN entry window appears on the screen.
2. Enter the Security PIN and then select Yes. All settings are then reset. The TV turns off and on again automatically, and then displays the Setup screen.

   For more information on Setup, refer to the user manual that came with the TV.

Turning the TV into a Display Model (exclusively for retail stores)

MENU > Support > Use Mode Try Now

Select Support > Use Mode > Store Demo. This turns the TV into a display model for use in a retail environment.

For all other uses, select Home Use.

Store Demo should be used in retail environments only. With Store Demo, certain functions are disabled and the TV automatically resets itself after a certain amount of time.

Data Service

Availability depends on the specific area.

Allows the user to use information (text, still images, graphics, documents, software, etc.) transmitted via broadcast media.

Auto Run Data Service

MENU > Broadcasting > Channel Settings > Auto Run Data Service

Sets whether or not to automatically run data service. Auto Run Data Service automatically runs data service without user intervention.

If any other secondary function is under way, Auto Run Data Service may not work.

Using Data Service

1. If Auto Run Data Service is On, The data service will automatically run with loading banner.
2. Select OK. The data service screen will be displayed.
3. Select a desired option by using your remote on the data service screen. The selected service will be started.
4. If you select EXIT using your remote, data service will be closed.

   If any other secondary function is under way, Auto Run Data Service may not work Provided data service information may vary depending on broadcast.

Main Data Service buttons and their functions

- ▲ / ▼ / ◀ / ▶

  Moves the Data Service menu up, down, left and right.

- OK

  Runs a selected item.

- EXIT

  Stops a running Data Service.

  Operations may differ depending on the service provider.

Getting Support

The TV has several built-in systems designed for user and TV system support.

Support through Remote Management

MENU > Support > Remote Management Try Now

If you need assistance with your TV, you can use this feature to let Samsung Electronics diagnose your TV remotely. You will need to read and agree to the service agreement before using this feature. A Samsung Electronics technician will then diagnose, repair, and update your TV remotely. These features are only available when your TV is connected to the Internet.

What Does Remote Service Do?

Samsung Remote Support service offers you one-on-one support with a Samsung Technician who can remotely.

- **Diagnose** your TV
- **Adjust the TV settings** for you
- **Perform a factory reset** your TV
- Install recommended **firmware updates**

How Does it Work?

Having a Samsung Tech remotely service your TV is easy.

Call the Samsung Contact Center and ask for remote support.

Open the menu on your TV and go to the **Support section**.

Select Remote Management, and then read and agree to the service agreements. When the PIN screen appears, provide the PIN number to the agent.

The agent **accesses your TV**.

Finding the Information You Need for Service

MENU > Support > Contact Samsung Try Now

Use this option to display the address of the Samsung website, the call center phone number, your TV's model number, your TV's software version, the Smart Hub info, and other information you need to get service support from a Samsung call agent or the Samsung website.

There is a problem with the picture.

Testing the Picture

MENU > Support > Self Diagnosis > Picture Test Try Now

Before you review the list of problems and solutions below, use Picture Test to determine if the problem is caused by the TV. The Picture Test displays a high definition picture you can examine for flaws or faults. If the test picture does not appear or there is noise or distortion, the TV may have a problem. Contact Samsung's Call Center for assistance. If the test picture is displayed properly, there may be a problem with an external device. Please check the connections. If the problem persists, check the signal strength or refer to the external device's user manual.

The Problem	Try this!
Flickering and Dimming	If your Samsung Television is flickering or dimming sporadically, you may need to disable some of the energy efficiency features. Disable Energy Saving (System > Eco Solution > Energy Saving) or Eco Sensor (System > Eco Solution > Eco Sensor).
Component Connections/Screen Color	If the color on your Samsung television screen is not correct or the black and white colors are off, run Picture Test (Support > Self Diagnosis > Picture Test). If the test results indicate that the problem is not caused by the TV, do the following: • Confirm that the TV's video input connectors are connected to the correct external device video output connectors. • Check the other connections as well. If the TV is connected to an external device via a component cable, confirm that the Pb, Pr, and Y jacks are plugged into their proper connectors.
Screen Brightness	If the colors on your Samsung TV are correct but just a little too dark or bright, try adjusting the following settings first. • Go to the Picture menu and adjust the Backlight, Contrast, Brightness, Sharpness, Color, and Tint (G/R) settings.
Unwanted Powering Off	If your Samsung TV appears to turn off by itself, try disabling some of the TV's energy efficiency features. See if Sleep Timer (System > Time > Sleep Timer) has been enabled. The Sleep Timer automatically turns the TV off after a specified period of time. If the Sleep Timer has not been enabled, see if No Signal Power Off (System > Eco Solution > No Signal Power Off) or Auto Power Off (System > Eco Solution > Auto Power Off) has been enabled and disable them.
Problems Powering On	When the TV is turned on, the remote control receiver flashes 5 times before the screen turns on. If you are having problems powering on your Samsung television, there are a number of things to check before calling the service department. Confirm that the TV's power cord is connected correctly at both ends and that the remote control is operating normally. Make sure that the antenna cable or cable TV cable is firmly connected. If you have a cable/satellite box confirm that it is plugged in and turned on.
Unable to find a Channel	If your TV is not connected to a cable box or satellite box, run Setup (System > Setup) or Auto Program (Broadcasting > Auto Program).

The Problem	Try this!
The TV image does not look as good as it did in the store.	Store displays are all tuned to digital, HD (high definition) channels. If you have an analog cable/set top box, upgrade to a digital set top box. Use HDMI or Component cables to deliver HD (high definition) picture quality. Many HD channels are upscaled from SD (Standard Definition) content. Look for a channel that is broadcasting true HD content. • Cable/Satellite Subscribers: Try HD channels from the channel lineup. • Air/Cable Antenna Connection: Try HD channels after running the Auto Program function. Adjust the cable/satellite box's video output resolution to 1080i or 720p.
The picture is distorted.	The compression of video content may cause picture distortions, especially in fast moving pictures from sports programs and action movies. A weak or bad quality signal can cause picture distortions. This is not an issue with the TV. Mobile phones used close to the TV (within 3 ft/1m) may cause noise in analog and digital channels.
The color is wrong or missing.	If you're using a Component connection, make sure that the Component cables are connected to the correct jacks. Incorrect or loose connections may cause color problems or a blank screen.
The color is poor or the picture is not bright enough.	Go to the Picture menu and then adjust the Picture Mode, Brightness, Sharpness, and Color settings. See if Energy Saving (System > Eco Solution > Energy Saving) has been enabled. Try resetting the picture. (Picture > Reset Picture)
There is a dotted line on the edge of the screen.	If the Picture Size has been set to Screen Fit, change the setting to 16:9. Change the cable/satellite box resolution.
The picture is black and white.	If you are using AV composite input, connect the video cable (yellow) to the TV's green component jack.

I can't hear the sound clearly.

Testing the Sound

MENU > Support > Self Diagnosis > Sound Test Try Now

Before you review the list of problems and solutions below, make sure that the TV Sound Output menu item is set to TV Speaker, and then listen to the speakers again. If the TV still does not play audio, run the Sound Test. The Sound Test uses a built-in melody to check for sound problems. If the TV does not play sound during the Sound Test, or the sound is distorted, there may be a problem with the TV. Contact Samsung's Call Center for assistance. If the TV plays the Sound Test melody without distortion, there may be a problem with an external device. Please check the connections. If the problem persists, refer to the external device's user manual.

The Problem	Try this!
There is no sound or the sound is too low at maximum volume.	Check the volume control of the device (cable/satellite box, DVD, Blu-ray, etc.) connected to your TV.
The picture is good but there is no sound.	Set Sound > Speaker Settings > TV Sound Output to TV Speaker. If you are using an external device, check the device's audio output option. (For example, you may need to change your cable box's audio option to HDMI if the box connected to your TV is using an HDMI cable.) To listen to the computer sound, connect the external speaker to the computer's audio output connector. If your TV has a headphone jack, make sure there is nothing plugged into it. Reboot the connected device by disconnecting and then reconnecting the device's power cable.
The speakers are making an odd sound.	Make sure that the audio cable is connected to the correct audio output connector on the external device. For antenna or cable connections, check the signal information. A low signal level may cause sound distortions. Run Sound Test (Support > Self Diagnosis > Sound Test).

There is a problem with the broadcast.

The Problem	Try this!
The TV is not receiving all channels.	If your TV is not connected to a cable box or satellite box: • Confirm that the coaxial cable is securely connected to the TV. • If you are using an antenna, verify it is positioned correctly and the all the connections are secure. • Run Setup (System > Setup) or Auto Program (Broadcasting > Auto Program).
There are no captions with digital channels.	Go to Caption (System > Accessibility > Caption) and change the Caption Mode. Some channels may not have caption data.
The picture is distorted.	The compression of the video content may cause picture distortions. This is especially true with fast moving pictures from sports programs and action movies. A weak signal can cause picture distortions. This is not a problem with the TV.

The computer won't connect.

The Problem	Try this!
The "Mode Not Supported" message appears.	Set your PC's output resolution so it matches a resolution supported by the TV.
The video is OK but there is no audio.	If you are using an HDMI connection, check the audio output setting on your PC. If you are using a DVI to HDMI cable, a separate audio cable is required.

I can't connect to the Internet.

The Problem	Try this!
The wireless network connection failed.	Make sure the TV is connected to a wireless IP router.
The software update over the Internet has failed.	Check the network connection status. If the TV is not connected to a network, connect to a network. The upgrade stops if you already have the latest software version.

Anynet+ (HDMI-CEC) isn't working.

The Problem	Try this!
Anynet+ does not work.	Confirm that the device is an Anynet+ device. The Anynet+ system supports Anynet+ devices only. Check if the power cord of the Anynet+ device is properly connected. Check the cable connections of the Anynet+ device. Go to System and see if Anynet+ (HDMI-CEC) has been set to On. Check whether the TV remote control is in TV mode. Check whether the remote control is Anynet+ compatible. Anynet+ may not function when some other functions are active, including ... (Channel Search, Smart Hub, Start Up, etc.) If you have disconnected and then reconnected the HDMI cable, scan for devices again or turn your TV off and on.
I want to start Anynet+.	Check if the Anynet+ device is properly connected to the TV and then navigate to the System menu to see if Anynet+ (HDMI-CEC) is set to On. Once verified, press the TOOLS button on a standard remote. A list appears. Select Anynet+ (HDMI-CEC) from the list and then a device.
I want to exit Anynet+.	Select View TV from the Anynet+ menu. Select a non-Anynet+ device from the Source list.
The message "Connecting to Anynet+ device..." or "Disconnecting from Anynet+ device" appears on the screen.	You cannot use the remote control when you are configuring Anynet+ or switching to a viewing mode. Use the remote control after the TV has completed the Anynet+ configuration or has switched to a viewing mode.
The Anynet+ device won't play.	You cannot use the play function when Setup is in progress.
The connected device is not displayed.	Check whether the device supports Anynet+. Check whether the HDMI cable is properly connected. Go to System and see if Anynet+ (HDMI-CEC) has been set to On. Scan for Anynet+ devices again. Anynet+ devices must be connected to the TV using an HDMI cable. Make sure the device is connected to your TV with an HDMI cable. Some HDMI cables may not support Anynet+. If the connection is terminated because there has been a power failure or the HDMI cable has been disconnected, please scan for the device again.
The TV audio is not being played through the receiver.	Connect an optical cable to the TV and the receiver. ARC enables digital sound to be outputted via the HDMI (ARC) port. However, ARC is only available when the TV is connected to an audio receiver that supports ARC.

Data Service

There is something wrong with the TV.	Try this!
Why am I getting on-screen messages when I haven't selected the Data Service option?	If Auto Run Data Service is set to On, messages will automatically appear on the screen when you watch a broadcast that supports the Data Service. If the broadcast doesn't support the Data Service, no messages will appear on the screen. If you do not wish to receive Data Service messages, disable Auto Run Data Service.
How do I hide Data Service messages?	On a standard remote control, press the EXIT button. The messages hide. If you do not wish to receive Data Service messages, disable Auto Run Data Service.
How do I use the Data Service?	Enabling the Auto Run Data Service option automatically displays messages on the screen whenever you watch a broadcast that supports the Data Service. You can press the corresponding buttons shown on the screen to access additional features and functions offered by that broadcast.
What is an interactive service and how does it work?	Interactive services include viewer surveys, quizzes, ticket requests, product purchases, and other interactions between the viewer and the TV station. Generally, you will need to set up an account with the broadcaster and log in to the account in order to enjoy the interactive services they offer. Note that interactive services are only available when your TV is connected to the Internet. In addition, T-Commerce requires that you have a certificate. Copy your certificate from the computer to a USB device and connect that device to the TV. (Interactive services are not being offered yet. The actual service launch date varies depending on the broadcaster.)
A message displays "Receiving" but no change happens.	This indicates an error has occurred while receiving data. An execution error message will also appear on the screen. If this happens, try again.
Nothing is displayed on the screen after the Data Service is launched.	The Data Service may be initializing or the signal may have been severed by the broadcaster.
What is Blur Reduction?	The Data Service can cause the same screen to appear and create a blur. Blur Reduction prevents this blurring effect. If you see a message saying that the Data Service is about to terminate because of Auto Protection Time, press any button. This will keep the Data Service running.

I am having trouble launching/using apps.

The Problem	Try this!
I launched an app, but it's in English. How can I change the language?	Languages supported by the app may be different from the user interface language. The ability to change the language depends on the service provider.
My application is not working.	Check with the service provider. Refer to the help section on the application service provider's website.

My file won't play.

The Problem	Try this!
Some files can't be played.	This problem may occur with high-bitrate files. Most files can be played back, but you might experience problems with high-bitrate files.

I want to reset the TV.

Reset	Path	Description
Reset Settings	MENU > Support > Self Diagnosis > Reset	Reset Picture, Sound, Channel, Smart Hub, and all other settings except for the network settings to their factory default settings.
Resetting Smart Hub	MENU > Smart Hub > Smart Hub Reset	Reset all saved information relating to Samsung accounts and linked service accounts, as well as Smart Hub service agreements and applications.

Other Issues

The Problem	Try this!
The TV is hot.	Watching TV for an extended period of time causes the panel to generate heat. The heat from the panel is dissipated through internal vents running along the top of the TV. The bottom, however, may feel hot to the touch after extended use. Children watching TV need constant adult supervision to prevent them from touching the TV. This heat, however, is not a defect and does not affect the TV's functionality.
The picture won't display in full screen.	HD channels will have black bars on either side of the screen when displaying upscaled SD (4:3) content. Black bars will appear at the top and bottom of the screen when you watch movies that have aspect ratios different from your TV. Adjust the picture size options on your external device or set the TV to full screen.
The "Mode Not Supported" message appears.	The output resolution of the attached device is not supported by the TV. Check the TV's supported resolutions accordingly.
The Captions item in the TV menu is grayed out.	You cannot select the Caption menu if you have selected a source connected to the TV via HDMI or Component. To view captions, turn on the external device's caption function.
The TV smells of plastic.	This smell is normal and will dissipate over time.
The Signal Information option under Self Diagnosis isn't activated.	Verify that the current channel is a digital channel. The Signal Information is only available for digital channels.

The Problem	Try this!
The TV is tilted to the side.	Remove the base stand from the TV and reassemble it.
The Broadcasting option has been deactivated.	Broadcasting is only available when the Source is set to TV. The Broadcasting menu cannot be accessed while watching TV using a cable box or satellite receiver.
The settings are lost after 5 minutes or every time the TV is turned off.	If the Use Mode is set to Store Demo, the TV's audio and video settings are automatically reset every 5 minutes. Change the Use Mode (Support > Use Mode) to Home Use.
There is an intermittent loss of audio or video.	Check the cable connections and reconnect them. Loss of audio or video can be caused by using overly rigid or thick cables. Make sure the cables are flexible enough for long term use. If you are mounting the TV to a wall, we recommend using cables with 90-degree connectors.
There are small particles on the TV's bezel.	This is part of the product's design and is not a defect.
The PIP menu is not available.	PIP functionality is only available when you are using an HDMI or Component source.
A POP (TV's internal banner ad) appears on the screen.	Change the Use Mode (Support > Use Mode) to Home Use.
The TV is making a popping noise.	The expansion and contraction of the TV's outer casing may cause a popping noise. This does not indicate a product malfunction. The TV is safe to use.
The TV is making a humming noise.	Your TV utilizes high-speed switching circuits and high levels of electrical current. Depending on the TV's brightness level, the TV may seem slightly noisier than a conventional TV. Your TV has undergone strict quality control procedures that meet our demanding performance and reliability requirements. Some noise coming from the TV is considered normal and is not an acceptable cause for an exchange or refund.

Read Before Using Apps

- Due to the product characteristics featured on the Samsung Smart Hub, as well as limitations in available content, certain features, applications, and services may not be available on all devices or in all territories. Some Smart Hub features may also require additional peripheral devices or membership fees. Visit http://www.samsung.com for more information on specific device information and content availability. Services and content availability are subject to change without prior notice.
- Samsung Electronics takes no legal responsibility whatsoever for any interruption of app services caused by the service provider for any reason.
- Application services may be provided in English only and available content may vary depending on the area.
- For more information about applications, visit the applicable service provider's website.
- An unstable Internet connection may cause delays or interruptions. In addition, applications may terminate automatically depending on the network environment. If this occurs, check your Internet connection and try again.
- Application services and updates may become unavailable.
- Application content is subject to change by the service provider without prior notice.
- Specific services may vary depending on the version of the application installed on the TV.
- An application's functionality may change in future versions of the application. If this occurs, run the application's tutorial or visit the service provider's website.
- Depending on the service provider's policies, certain applications may not support multitasking.

Read Before Using the Web Browser

1. Select **Web Browser**. The browsing screen may differ from the one on your computer.
2. The web browser is not compatible with Java applications.
3. You cannot download files. If you attempt to download a file, you will receive an error message instead.
4. The web browser may not be able to access certain websites.
5. Playing Flash videos is not supported.
6. E-commerce for online purchases is not supported.
7. With websites that have scrollable windows, scrolling a window can result in corrupted characters.
8. ActiveX is not supported.
9. Certain options are not accessible in Link Browsing mode. (Switch to Pointer Browsing to activate those options.)
10. Only a limited number of fonts are supported. Certain symbols and characters may not be displayed properly.
11. The response to remote commands and the resulting on-screen display may be delayed while a webpage is loading.
12. Loading a webpage may be delayed or suspended completely with certain operating systems.
13. The copy and paste operations are not supported.
14. When composing an email or a simple message, certain functions such as the font size and color selection may not be available.
15. There is a limit to the number of bookmarks and the size of the log file that can be saved.
16. The number of windows that can be opened concurrently varies depending on the search conditions and the TV model.

17. The web browsing speed will vary depending on the network environment.
18. The web browser supports .mp3 audio files only.
19. The web browser supports a specific file format for importing and exporting bookmarks. (Compatible Format: Netscape-bookmarkfile- 1)
20. The folder tree information is not included when importing and exporting bookmarks.
21. Exporting bookmarks to a USB device connected to the TV saves the bookmarks under a folder named "Samsung SmartTV Bookmark".
22. If the **Clock** (**System** > **Time** > **Clock**) has not been set, the browsing history will not be saved.
23. The browsing history is saved from latest to oldest, with the oldest entries being overwritten first.
24. Video sources from PC-optimized streaming service providers may not play properly on our proprietary web browser.
25. Using the on-screen QWERTY keyboard automatically disables PIP. (Except when entering a URL.)

Read Before Playing Photo, Video, or Music Files

Photo, Video, and Music File Use Limitations

- The TV supports MSC (Mass Storage Class) USB devices only. MSC is a class designation for mass storage devices. Types of MSC devices include external hard drives, flash card readers, and digital cameras. (USB hubs are not supported.) These kinds of devices must be connected directly to the TV's USB port. The TV may not be able to recognize the USB device or read the files on the device if it is connected to the TV via a USB extension cable. Do not disconnect the USB device while transferring files.
- Certain digital cameras and audio devices may not be compatible with the TV.
- A USB device that requires high power (more than 500mA or 5V) may not be supported. The TV may not support HDDs (Hard Disk Drives) connected to the USB port, depending on the model.
- The TV supports the FAT, exFAT, and NTFS file systems.
- After sorting files in the Folder view mode, the TV can display up to 1,000 files per folder. If the USB device contains more than 8,000 files and folders, however, some files and folders might not be accessible.
- The PTP (pier to pier) connection mode is available only for digital cameras. If you connect a smartphone or tablet to the TV using PTP mode, the TV will not recognize it.
- Be sure to connect a USB or external Hard Drive, supporting USB 3.0, to the USB 3.0 port.
- Certain files, depending on how they were encoded, may not play on the TV.
- Certain files are not available depending on the model.

Sending Files between Storage Devices Table

Storage device containing media content	Target device
USB Device	SugarSync, Dropbox, SkyDrive, Mobile Device
SugarSync, Dropbox, SkyDrive	USB Device
Mobile Device	USB Device

Supported External Subtitles

- Certain files, depending on how they were encoded, may not play on the TV.
- Certain files are not available depending on the model.

Name	Format
MPEG-4 Timed text	.ttxt
SAMI	.smi
SubRip	.srt
SubViewer	.sub
Micro DVD	.sub or .txt
SubStation Alpha	.ssa
Advanced SubStation Alpha	.ass
Powerdivx	.psb
SMPTE-TT Text	.xml

Supported Internal Subtitles

- Certain files, depending on how they were encoded, may not play on the TV.

Name	Container
Xsub	AVI
SubStation Alpha	MKV
Advanced SubStation Alpha	MKV
SubRip	MKV
VobSub	MKV
MPEG-4 Timed text	MP4
TTML in smooth streaming	MP4
SMPTE-TT Text	MP4
SMPTE-TT PNG	MP4

Supported Image Formats and Resolutions

Certain files, depending on how they were encoded, may not play on the TV.

File extension	Format	Resolution
*.jpg *.jpeg	JPEG	15360x8640
*.png	PNG	4096x4096
*.bmp	BMP	4096x4096
*.mpo	MPO	15360x8640

Supported Music Formats and Codecs

Certain files, depending on how they were encoded, may not play on the TV.

File extension	Format	Codec	Note
*.mp3	MPEG	MPEG1 Audio Layer 3	
*.m4a *.mpa *.aac	MPEG4	AAC	
*.flac	FLAC	FLAC	Supports up to 2 channels
*.ogg	OGG	Vorbis	Supports up to 2 channels
*.wma	WMA	WMA	Supports up to 10 Pro 5.1 channels. WMA lossless audio is not supported. Supports up to the M2 profile.
*.wav	wav	wav	
*.mid *.midi	midi	midi	Supports type 0 and type 1. Seek is not supported. Supports USB device only.
*.ape	ape	ape	
*.aif *.aiff	AIFF	AIFF	
*.m4a	ALAC	ALAC	

Supported Video Codecs

Certain files, depending on how they were encoded, may not play on the TV.

<table>
<tr><th>File format</th><th>Container</th><th>Video codecs</th><th>Resolution</th><th>Frame rate (fps)</th><th>Bitrate (Mbps)</th><th>Audio codecs</th></tr>
<tr><td rowspan="7">*.avi
*.mkv
*.asf
*.wmv
*.mp4
*.mov
*.3gp
*.vro
*.mpg
*.mpeg
*.ts
*.tp
*.trp
*.mov
*.flv
*.vob
*.svi
*.divx</td><td rowspan="7">AVI
MKV
ASF
MP4
3GP
MOV
FLV
VRO
VOB
PS
TS</td><td>Motion JPEG</td><td>640x480</td><td rowspan="7">MAX 30</td><td>8</td><td rowspan="7">Dolby Digital
LPCM
ADPCM(IMA, MS)
AAC
HE-AAC
WMA
Dolby Digital Plus
MPEG(MP3)
DTS(Core, LBR)
G.711(A-Law, µ-Law)</td></tr>
<tr><td>H.264 BP/MP/HP</td><td rowspan="6">1920x1080</td><td rowspan="6">30</td></tr>
<tr><td>DivX 3.11 / 4 / 5 / 6</td></tr>
<tr><td>MPEG4 SP/ASP</td></tr>
<tr><td>Window Media Video v9(VC1)</td></tr>
<tr><td>MPEG2</td></tr>
<tr><td>MPEG1</td></tr>
<tr><td>*.webm</td><td>WebM</td><td>VP8</td><td>1920x1080</td><td>6~30</td><td>20</td><td>Vorbis</td></tr>
</table>

Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- While the TV is playing a video at the bit rate of 10 Mbps or higher, the menu screens may be displayed slowly.

Video decoders

- H.264 is supported up to Level 4.1. (does not support FMO/ASO/RS)
- VC1 AP L4 is not supported.
- GMC 2 or above is not supported.

Audio decoders

- WMA 10 Pro supports up to 5.1 channels. Supports up to the M2 profile. WMA lossless audio is not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 2 channels.
- Dolby Digital Plus is supported for up to 5.1 channels.
- The DTS LBR codec is only available for MKV / MP4 /TS containers.

Read After Installing the TV

Picture sizes and input signals

Input signal	Picture size
Component	16:9, Zoom, Custom, 4:3
Component (1080i, 1080p)	16:9, Zoom, Custom, 4:3
Digital channel (720p, 1080i, 1080p)	16:9, Zoom, Custom, 4:3
HDMI (720p)	16:9, Zoom, Custom, 4:3
HDMI (1080i, 1080p)	16:9, Zoom, Custom, 4:3

The **Picture Size** setting is applied to the current source. The applied **Picture Size** will remain in effect whenever you select that source unless you change it.

Installing an Anti-Theft Lock

An anti-theft lock is a physical device that can be used to protect the TV against theft. Look for the lock slot on the back of the TV. The slot has a icon next to it. To use the lock, wrap the lock cable around an object that is too heavy to carry and then thread it through the TV's lock slot. The lock, is sold separately.

The method of using an anti-theft lock may differ for each TV model. Refer to the lock's user manual for more information.

Read Before Setting Up a Wireless Internet Connection

Wireless Internet Precautions

- This TV supports the IEEE 802.11a/b/g /n communication protocols. Samsung recommends using IEEE 802.11n. Video files stored on a device connected to the TV via Home Network may not play back smoothly.
- To use wireless Internet, the TV must be connected to a wireless router or modem. If the wireless router supports DHCP, the TV can use a DHCP or static IP address to connect to the wireless network.
- Select a channel that is not currently in use for the wireless router. If the channel set for the wireless router is currently being used by another device, the result is usually interference and/or a communications failure.
- Most wireless networks have an optional security system. To enable a wireless network's security system, you need to create a security key using characters and numbers. This security key is then needed to connect to a security-enabled AP.

Wireless Security Protocols

The TV only supports the following wireless network security protocols and is unable to connect to non-certified wireless routers:

- Authentication Modes: WEP, WPAPSK, WPA2PSK
- Encryption Types: WEP, TKIP, AES

In compliance with the newest Wi-Fi certification specifications, Samsung TVs do not support WEP or TKIP security encryption in networks running in the 802.11n mode.

If the wireless router supports WPS (Wi-Fi Protected Setup), you can connect the TV to your network using PBC (Push Button Configuration) or a PIN (Personal Identification Number). WPS automatically configures the SSID and WPA key settings.

Read Before Connecting a Computer (Supported Resolutions) - For the LED 5 series models

When you connect your TV to a computer, set the computer's video card to one of the standard resolutions listed in the tables below or on the next page. The TV will automatically adjust to the resolution you choose. Note that the optimal and recommended resolution is 1920 x1080.

Choosing a resolution not included in the tables can result in a blank screen or just the power indicator turning on.

Refer to the user manual of your graphics card for compatible resolutions.

IBM

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720x400	70Hz	31.469	70.087	28.322	-/+

MAC

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	67Hz	35.000	66.667	30.240	-/-
832x624	75Hz	49.726	74.551	57.284	-/-
1152x870	75Hz	68.681	75.062	100.000	-/-

VESA DMT

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	60Hz	31.469	59.940	25.175	-/-
640x480	72Hz	37.861	72.809	31.500	-/-
640x480	75Hz	37.500	75.000	31.500	-/-
800x600	60Hz	37.879	60.317	40.000	+/+
800x600	72Hz	48.077	72.188	50.000	+/+
800x600	75Hz	46.875	75.000	49.500	+/+
1024x768	60Hz	48.363	60.004	65.000	-/-
1024x768	70Hz	56.476	70.069	75.000	-/-
1024x768	75Hz	60.023	75.029	78.750	+/+
1152x864	75Hz	67.500	75.000	108.000	+/+
1280x720	60Hz	45.000	60.000	74.250	+/+
1280x800	60Hz	49.702	59.810	83.500	-/+
1280x1024	60Hz	63.981	60.020	108.000	+/+
1280x1024	75Hz	79.976	75.025	135.000	+/+
1366x768	60Hz	47.712	59.790	85.500	+/+
1440x900	60Hz	55.935	59.887	106.500	-/+
1600x900RB	60Hz	60.000	60.000	108.000	+/+
1680x1050	60Hz	65.290	59.954	146.250	-/+
1920x1080	60Hz	67.500	60.000	148.500	+/+

Read Before Connecting a Computer (Supported Resolutions) - For the LED 4 series models

When you connect your TV to a computer, set the computer's video card to one of the standard resolutions listed in the tables below or on the next page. The TV will automatically adjust to the resolution you choose. Note that the optimal and recommended resolution is 1366 x 768.

Choosing a resolution not included in the tables can result in a blank screen or just the power indicator turning on.

Refer to the user manual of your graphics card for compatible resolutions.

IBM

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720x400	70Hz	31.469	70.087	28.322	-/+

MAC

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	67Hz	35.000	66.667	30.240	-/-
832x624	75Hz	49.726	74.551	57.284	-/-

VESA DMT

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
640x480	60Hz	31.469	59.940	25.175	-/-
640x480	72Hz	37.861	72.809	31.500	-/-
640x480	75Hz	37.500	75.000	31.500	-/-
800x600	60Hz	37.879	60.317	40.000	+/+
800x600	72Hz	48.077	72.188	50.000	+/+
800x600	75Hz	46.875	75.000	49.500	+/+
1024x768	60Hz	48.363	60.004	65.000	-/-
1024x768	70Hz	56.476	70.069	75.000	-/-
1024x768	75Hz	60.023	75.029	78.750	+/+
1280x720	60Hz	45.000	60.000	74.250	+/+
1366x768	60Hz	47.712	59.790	85.500	+/+

Supported Resolutions for Video Signal

Resolution (DotsxLines)	Display Format	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Clock Frequency (MHz)	Polarity (Horizontal/ Vertical)
720(1440)x480i	60Hz	15.734	59.940	27.000	-/-
720(1440)x576i	50Hz	15.625	50.000	27.000	-/-
720x480	60Hz	31.469	59.940	27.000	-/-
720x576	50Hz	31.250	50.000	27.000	-/-
1280x720	60Hz	45.000	60.000	74.250	+/+
1280x720	50Hz	37.500	50.000	74.250	+/+
1920x1080i	60Hz	33.750	60.000	74.250	+/+
1920x1080i	50Hz	28.125	50.000	74.250	+/+
1920x1080	60Hz	67.500	60.000	148.500	+/+
1920x1080	50Hz	56.250	50.000	148.500	+/+
1920x1080	30Hz	33.750	30.000	74.250	+/+
1920x1080	25Hz	28.125	25.000	74.250	+/+
1920x1080	24Hz	27.000	24.000	74.250	+/+

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Glossary

- **480i/480p/720p/1080i/1080p**

  Generally refers to the number of effective scanning lines that determines the screen's resolution. There are two scanning methods: interlaced and progressive.

  - Scanning

    Sequential projection of pixels to form images. The higher the number of pixels, the clearer and more vivid the images.

  - Progressive

    A sequential scanning method that scans every line, one after another.

  - Interlaced

    A staggered scanning method that scans every other line until the end of the screen and then fills in the remaining lines.

  Example) If the number of horizontal scan lines is 480i

  Scans 240 lines from start to finish and then scans the remaining 240 lines for a total of 480 lines.

  * General differences between 480i and 480p are as follows:

	480i	480p
Horizontal Frequency	15.75Khz	31.5Khz
FPS	30	60
Lines on Screen	480	480

- **DVI (Digital Visual Interface)**

  Connecting the TV's DVI connector to a computer's DVI connector via an HDMI-to-DVI cable lets you use the TV as a computer monitor. However, HDMI-to-DVI cables deliver video signals only. You must connect a set of speakers to the computer using a separate cable to hear the computer's audio.

- **HDMI (High Definition Multimedia Interface)**

  HDMI is a method of transmitting both video and audio signals via a single cable.

- **Dynamic versus Static IP Addresses**

  If the network requires a dynamic IP address, use an ADSL modem or router that supports the Dynamic Host Configuration Protocol (DHCP). Modems and routers that support DHCP automatically provide the IP address, subnet mask, gateway and DNS values the TV needs to access the Internet, so they do not have to be entered manually. Most home networks use a dynamic IP address.

  If the network requires a static IP address, enter the IP address, subnet mask, gateway, and DNS values manually when setting up the network connection. To get the IP address, subnet mask, gateway and DNS values, contact your Internet Service Provider (ISP).

  If the network requires a static IP address, use an ADSL modem that supports DHCP. ADSL modems that support DHCP also allow static IP addresses.

- **Ethernet**

  Ethernet is a LAN (Local Area Network) that uses coaxial cables standardized by the IEEE.

- **Component Connection**

  Component connections are mostly used for game consoles and transmit the video signal by splitting it into a luminance signal (Y) and two color signals (Pb and Pr). The connector is marked as [Component IN]_(Pr, Pb, Y) on the back of the TV. On some devices, it is sometimes marked as Cr, Cb, Y. Cb and Cr are the digital conversions of the Pb and Pr signals.

  The connectors are normally color-coded red (R), blue (B), and green (G) and offer the best picture quality possible for an analog connection.